The role of NGOs and sustainability standards in oil palm developments in Gabon and Cameroon

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Declaration of originality

This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the Preface and specified in the text.
It is not substantially the same as any that I have submitted, or, is being concurrently submitted for a degree or diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text.

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It does not exceed the prescribed word limit for the relevant Degree Committee.

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Contents

Acronyms

CDC	Cameroon Development Corporation
CED	Centre for Environment and Development
CIFOR	Center for International Forestry Research
CSPO	Certified sustainable palm oil
FAO	UN Food and Agriculture Organisation
FMU	Forest Management Unit
FFB	Fresh fruit bunch
FPIC	Free prior and informed consent
FPP	Forest Peoples Programme
GAR	Golden Agri-Resources
ha	hectares
HCS	High Carbon Stock
HCV	High Conservation Value
IBA	Important Bird and Biodiversity Area
IFC	International Finance Corporation
IFL	Intact forest landscape
IUCN	International Union for Conservation of Nature
MINFOF	Ministry of Forests and Wildlife (Cameroon)
MINEP	Ministry of Environment and Nature Protection (Cameroon)
MINADER	Ministry of Agriculture and Rural Development (Cameroon)
MINEPAT	Ministry of Economy, Planning and Regional Development (Cameroon)
Mt	Megatonnes; a million tonnes
NGO	Nonprofit nongovernmental organisation
PA	Protected area
REDD+	UN programme for Reducing Emissions due to Degradation and Deforestation
REDDAF	Reducing Emissions due to Degradation and Deforestation in Africa
RSPO	Roundtable for Sustainable Palm Oil
tC/ha	Tonnes of carbon per hectare
TFT	The Forest Trust
WCS	Wildlife Conservation Society
WRI	World Resources Institute
WWF	World Wildlife Fund
ZSL	Zoological Society London

Chapter 1
Introduction

1.1 NGOs and corporations – collaborative encounters between antagonists

At the beginning of the 21st century, the international political and economic landscape is heavily coloured by multinational companies which collectively have gathered so much force that, in the opinion of some, they have eroded the ability of nation-states to exercise full sovereignty (Cohen, 2007; Nader, 2011). It is thought that as a consequence of this power, many government policies now stand aligned with neoliberal ideas favouring free market ideals and increasing global trade flows to the cost of e.g. the safeguarding of public goods such as the environment (Harvey, 2005). Yet multinationals and governments are not the only painters of this landscape; nonprofit nongovernmental organisations (NGOs) and the coalitions they form have increasingly become significant actors on the world stage, affecting environmental and social outcomes in a wide range of settings (Keck and Sikkink, 2014).

NGOs involved with conservation of the environment act in a variety of ways to address the threats to the "natural world" which they perceive to exist (Barakso, 2010). One of the ways in which they do so is through activism or advocacy: Trying to influence actors such as governments, consumers or businesses to change their behaviour (Keck and Sikkink, 1999). By e.g. exposing environmental harm, informing the public, lobbying governments, or liaising with companies, they form a counter-weight to the pull of the corporate world, away from profit-driven incentives towards more value-based decision-making (Yaziji and Doh, 2009).

Over the last ten years, formal collaborative work in the shape of partnerships between NGOs and corporations has become a regular occurrence (Dahan et al., 2010). One outcome of this engagement between antagonists is the proliferation of voluntary governance structures and

accompanying sustainability standards. Ideas of sustainability and 'sustainable development' became defined by the Brundtland Commission in 1992 when the international community embodied in it formally recognised that if it is to flourish into the future, humanity is "forced… to concern itself with the impacts of ecological stress – degradation of soils, water regimes, atmosphere, and forests". They stated that development is only sustainable when it "meets the needs of the present without compromising the ability of future generations to meet their own needs". In addition, it is now recognised by many that the concept of sustainability should include a triple focus; on long term economic viability, environmental conservation and social responsibility (Adams, 2003). Out of these ideas, various efforts have been made to create specific guidelines to ensure sustainability for e.g. commodities production: the so called environmental or sustainability standards. Standards have become particularly common in relation to agricultural products from developing countries which are consumed in Northern nations (Giovannucci and Ponte, 2005).

One agricultural product which has been a key area of contention and, also, of collaboration, between the corporate and NGO worlds is palm oil. Used in a variety of goods such as cosmetics, foods, and biofuel, palm oil is a versatile product. Its high yields and low production costs have made investment in the crop hugely profitable (Sheil et al., 2009) and led to a boom in the palm oil industry with current production exceeding 50 million tonnes annually (FAO, 2015). While oil palm has helped economically develop remote regions of Southeast Asia and improve livelihoods (Rist et al., 2010) the expansion of oil palm plantations has also been associated with forest fires, environmental degradation, carbon emissions from peatlands and human rights violations (Sayer et al., 2012). It was estimated that of the nearly five million hectares increase in palm oil cultivation in Indonesia and Malaysia between 1990 and 2005, at least 55% directly replaced tropical forest (Gibbs et al., 2010; Koh and Wilcove, 2008).

In response, the oil palm industry became exposed to more 'intense, diverse, sustained and global public concern and interest' than most other sectors have ever experienced (Wakker, 2013). The multi-stakeholder voluntary governance structure, the Roundtable for Sustainable Palm Oil (RSPO) began to certify 'sustainable palm oil' in 2007 but was quickly criticised for

being insufficient to guarantee genuine sustainability (Biofuel Watch, 2008). One key criticism was that so-called sustainable palm oil could in fact have been produced on land which was previously covered by secondary forest, which has far more value to wildlife and as a carbon sink than oil palm (Edwards et al., 2010). In order to be sustainable, it was proposed that palm oil needed not only to be produced taking into account the social and environmental sustainability of the existing RSPO principles and criteria, but should be grown on land which was already deforested or degraded (Fairhurst and McLaughlin, 2009; Gingold et al., 2012)[1]. When from 2010 to 2014 in response to campaigning action several influential companies in the supply chain committed to only using sustainable palm oil which had caused no deforestation at all – the Zero Deforestation commitments – the High Carbon Stock (HCS) concept was developed to operationalise their promises (Senior et al., 2015).

Since about 2014, the sustainability standards embedded in the RSPO and in companies' individual voluntary Zero Deforestation commitments have become integrated into the discourse of the global palm oil industry (Climate and Land Use Alliance, 2014). While the RSPO standard stipulate a range of social, commercial and environmental conditions for their certification of plantations, company and palm oil as detailed in their Principles and Criteria, the details of the Zero Deforestation commitments are still being developed by different groups (see chapter 3). This thesis focuses primarily on the selection of land for new palm oil cultivation and the associated deforestation rather than a wider set of conditions. In this respect, the RSPO demands, for example, that areas of High Conservation Value (HCV) such as primary forest and precious habitat are conserved, that steep terrain is avoided and local people's land use is respected. The Zero Deforestation commitments are in fact primarily focused on the planting stage of the palm oil production process and demand first and foremost that any forested area above a certain biomass threshold is not converted.

Sustainability standards, while resulting from NGO-corporate antagonism, have become

[1] For an in-depth discussion of the different – and contentious – definitions of degraded land see (McCormick et al., 2014)

key spaces for collaboration between the opposing actors. A new era has begun for the oil palm sector, and it is now key to understand how these agreements on the global scale are being enacted locally.

1.1.1 Oil palm in Cameroon and Gabon

From the late 2000s a range of factors, including perceived land shortages in Malaysia and Indonesia, caused multinational corporations to aim the development of large industrial oil palm plantations to forest-covered countries elsewhere in the tropics (Wich et al., 2014). While obtainable yields in central Africa are expected to be lower than those in Southeast Asia due to the occurrence of an annual dry season (Corley and Tinker, 2015), Africa was seen as an attractive area for investment and termed by some as the "new frontier" for oil palm (Greenpeace, 2012). Previously, investors have been deterred by the region's poor business environment, low quality infrastructure, and weak land productivity records; now an improvement in these dimensions meant that companies felt more confident investing (Megevand, 2013). Within the continent, Gabon and Cameroon together with Liberia became the main targets of the globe's largest foreign oil palm companies (Carrere, 2010).

Based in the Congo Basin in Central Africa, Cameroon and Gabon account for 10.0% and 11.2% of Africa's lowland rainforest area respectively (Mayaux et al., 2013). These forests are among the richest in biodiversity with high numbers of endemic species, home to a number of threatened and endangered species including great apes, the African forest elephant, and the critically endangered Preuss's red colobus (IUCN, 2014). As in most African rainforests, there has been comparatively little development in industrial agriculture; in fact most deforestation has been driven by small-scale clearing by subsistence farmers (Rudel 2013). Historical deforestation rates have been far lower in central Africa than in most other tropical regions (de Wasseige et al., 2012). Yet due to a lack of appropriate data, estimates vary widely; for Cameroon, for example, from 67,500 per year between 2000 - 2005 (Ernst et al., 2013) to 220,000 a year between 1990 – 2010 (FAO and ITTO, 2011).

Oil palm has been casually harvested in the forests of Cameroon and Gabon for centuries. Over the twentieth century Cameroon developed a small industrial and a strong smallholder sector (Nkongho et al., 2014a). The 160,000 ha which are estimated to be exploited for oil palm in Cameroon (two thirds smallholders, one third industrial plantations) produce only 230,000 tonnes of crude palm oil due to very low yields in most of the country's industrial and smallholder farms (Feintrenie, 2014). Gabon's agricultural sector has seen limited development, with most of its population living in urban areas and only a tiny plantation sector (Carrere, 2010). Both nations have stated in their long term economic development strategies that they intend to develop their palm oil industries in the future, with Cameroon considering this a 'national priority' (Gabon Emergent, 2012; Republic of Cameroon, 2009). Not only is this part of a strategy which aims to diversify the economy away from a reliance on income from the sale of mineral oil, it is also a way to address the deficit in vegetable oil which the countries experience (Yankam Njonou, 2015).

1.2 Aims and objectives

In the last five years, much concern has been expressed about the fast expansion of large plantations of oil palm in tropical forest in African countries. However, in this same period, many multinational companies have made major commitments to eradicate deforestation in their palm oil supply chain.

This thesis aims to go further than existing literature on the discursive statements made by corporate stakeholders in the palm oil sector (see Pye, 2010), and look at whether NGO actions and participation in voluntary sustainability initiatives have resulted in decreased deforestation on the ground. To do so I examine how 1) how the oil palm development trajectory in Gabon and Cameroon has changed during a period of NGO scrutiny and the rise to prominence of new sustainability standards and 2) how it might do so in the future given changing interpretations of the standards used to operationalise Zero Deforestation commitments. I focus on these two countries in particular because they 1) are two of the three African countries which have received most interest from foreign oil palm companies, 2) are

adjacent and share a currency, a similar legal and political framework and language as inherited from the French colonial powers, and 3) have recently hosted carbon mapping projects at a finer scale than other nations.

In chapter two I address how a large and diverse collection of actors including e.g. NGOs, civil society groups, individuals, companies, academics and journalists – also called a *transnational advocacy network* – have aimed to change the normative context in which oil palm developments in the tropics take place. I connect the well-studied global activities conducted by NGOs and other actors to local outcomes in a specific region: I argue that the Zero Deforestation commitments resulting from these activities have strongly affected the trajectory of development of oil palm in Gabon and Cameroon.

In chapter three I examine how potential upcoming changes in the standards used to operationalise Zero Deforestation commitments might affect the future of industrial plantations in Cameroon and Gabon. The HCS concept is currently being redefined by one group of stakeholders, and the accompanying carbon thresholds loosened for areas with low economic development, such as those found in many parts of Africa. Here I aim to show what effect a doubling of the carbon threshold could mean for the industrial oil palm sector in Cameroon and Gabon.

Chapter 2
The influence of transnational advocacy on oil palm planting in Gabon and Cameroon

2.1 Introduction

Since the mid-1990s concerns about the social and environmental impacts of producing palm oil in Southeast Asia have led to campaigns by an increasing number of small and large civil society organisations, ranging from local farmers' associations to large NGOs such as WWF and Greenpeace (Colchester and Chao, 2013). Yet alongside such formal groups, a wide range of actors have been involved in attracting attention to and attempting to change the oil palm industry (Pye, 2010; Yaap, 2010). This crop and its producers have been the target of the activism of what political scientists call a 'transnational advocacy network'; that is to say an informal network of autonomous organisations, groups, and individuals across different countries, bound together by shared moral values, a common discourse and, most importantly, dense information exchanges (Keck and Sikkink, 1999). They may include NGOs, local social movements, foundations, intellectuals, academics and journalists and a range of other actors; within them, information and resource exchange between the global North and South is very common (Carpenter, 2007; Keck and Sikkink, 2014). Over the last few decades, NGOs and the transnational networks they maintain have become powerful actors in international and national affairs (Jordan and Van Tuijl, 2000; Simmons, 1998).

Typically, for any given issue, there are numerous overlapping transnational networks advocating change. Tropical deforestation for example is an overarching issue which is a key focus point for a number of transnational networks. More specifically, advocacy networks have formed around single commodities which are playing a role in tropical deforestation such as hardwood timber, soy beans and palm oil. Based on moral and utilitarian arguments that tropical forests are valuable and should be conserved, these networks aim to set new norms in

business and governments in consuming and producing nations, as to how the production of these commodities should be taking place. They usually do this by engaging in a range of activities including the promotion of new policy, the monitoring of compliance during implementation, and the shaming of norm violators (see textbox below).

> **Keck and Sikkink's** (1999) typology of common network tactics:
> (a) *information politics,* or the ability to move politically usable information quickly and credibly to where it will have the most impact;
> (b) *symbolic politics,* or the ability to call upon symbols, actions or stories that make sense of a situation or claim for an audience that is frequently far away (see also Brysk, 1994, 1995);
> (c) *leverage politics*, or the ability to call upon powerful actors to affect a situation where weaker members of a network are unlikely to have influence; and
> (d) *accountability politics,* or the effort to oblige more powerful actors to act on vaguer policies or principles they formally endorsed.

The 'transnational palm oil advocacy network' has been key to the changing of corporate norms about palm oil production: from the first agreement between Swiss retail company Migros and WWF, via the setting up of the Roundtable of Sustainable Palm Oil (RSPO) in 2004, to the recent host of Zero Deforestation commitments, in which large industry players, NGOs, scientists and other members of the network were deeply involved (Koh et al., 2010; Oosterveer, 2015; Pye, 2010). It is widely accepted that over the last twenty years, the diverse campaign around palm oil has made significant headway in eliciting new attitudes to the crop where it matters most – in governments and industry (Climate and Land Use Alliance, 2014; Khor, 2011; Oosterveer, 2015; Paoli, 2014; Yaap, 2010). Various analyses have been conducted to show how the progress in creating new outlooks – which include ideas of environmental protection and social safeguards – has been achieved (see especially Pye 2010). However, these studies have remained at the level of discursive commitments by companies and governments; this equals policy and behavioural change in places removed from where the oil palm industry ultimately has the environmental and social impact which needs to be addressed: in rainforests in tropical countries.

Thus to understand whether the new norms and their accompanying commitments have led to meaningful change in actual conservation outcomes one needs to go further and ask: Has any deforestation for oil palm been averted due to pressure from transnational

advocacy networks? Here I provide a case study which suggests that the work by the network around palm oil has strongly affected the way the sector is developing in Cameroon and Gabon. The global palm oil industry and its mirror – the transnational advocacy network – are large, amorphous entities which are hard to characterise accurately. Making confident statements as to their behaviour as a global unit is difficult, if not impossible. Therefore, one approach for assessing the impact of transnational advocacy on deforestation behaviour by oil palm companies is to choose a smaller set of countries and conduct an in-depth, qualitative analysis. This is the choice I have made here.

2.1.1 Structure of the chapter

In the next sub-chapter I will outline the interview methods used in this study (section 2.2). The information obtained from these interviews is then, without direct reference, used throughout the next sections of the chapter alongside information from the literature; to explore the argument that in Cameroon and Gabon a non-negligible amount of deforestation for oil palm has been averted (or at least delayed) because of the activities of the transnational advocacy network.

Then, firstly, I will discuss the expectations held by NGOs, scientists and others for the oil palm industry in Africa from 2009 onwards (section 2.3.1) and show that few of these expectations have materialised since then (2.3.2). Sections 2.4.1 and 2.4.2 provide a history of the activities engaged in by the transnational advocacy network around oil palm and the commitments that have been made as a result of this by important stakeholders. Next I examine how, firstly, land selection procedures by foreign companies in Gabon and Cameroon have changed due to international Zero Deforestation commitments and ongoing pressure from the transnational advocacy network (2.5.1) and, secondly, how transnational advocacy activities within Cameroon have affected local outcomes (2.5.2). I also investigate whether the current low palm oil price is likely to be responsible for the big turnaround (2.5.3).

Concluding by arguing that transnational advocacy has played a key role in

influencing the industrial oil palm industry in Gabon and Cameroon, I next turn to some of the implications of my findings. I briefly look at issues related to the accountability of the transnational network and how nations' sovereignty is affected (2.6.1). I then propose that the power which is embedded in certain transnational advocacy networks and their actions could be harnessed for a variety of conservation goals (2.6.2).

2.2 Methods

For this study on the development of industrial oil palm plantations in Cameroon and Gabon I conducted 52 semi-structured interviews. I also reviewed newspaper and online articles and the published and grey literature on the issues, including the first Cameroonian National Oil Palm Strategy (2015). Seven weeks of field work in Cameroon were carried about by myself and a research assistant (a British male, 20 years old). This time was spent in the capital, Yaoundé, and three towns in the oil palm belt.

2.2.1 Stakeholders' selection and sampling methods

Interview data was collected in person and via phone interviews between December 2014 and June 2015. Fieldwork in Cameroon took place in February and March 2015 and consisted of key informant interviews with members of the above stakeholder groups. In total I interviewed 51 respondents (see table 1). I selected participants for these interviews using purposive and snowball sampling to capture a full range of opinions and expertise about the Cameroonian oil palm industry and the global influences affecting it.

I identified six stakeholder groups which represent various actors that are directly or indirectly involved with the land selection process for oil palm plantations:

- Companies – Palm oil plantation businesses and associated environmental consultancies
- Researchers – academics at universities and international research institutes
- International NGOs – including local branches of international NGOs
- Local NGOs – from Cameroon and Gabon
- Government officials – local and national
- Local communities

I conducted interviews with the first five of these groups and engaged in participant observation with the last group.

Category	Details	Number of interviews
NGOs	International NGO	9
	Local NGO	10
Companies	Plantation companies in Cameroon (of 3)	3
	Plantation companies in Gabon (of 2)	2
	Plantation companies elsewhere in Africa	2
	Consultancies hired by OP companies	3
Government officials	In Cameroon	16
Researchers		6
Total		**51**

Table 1 number of respondents from different stakeholder groups

I contacted each oil palm production company with an actual or intended total plantation size of at least 3,000 ha in Gabon and Cameroon plus companies which have been known to apply for concessions but have withdrawn from the process. The two Gabonese plantation companies and the only three active Cameroonian companies have taken part in my research (see table 2), as well as two companies which are active in Africa and have considered and rejected Cameroon as a potential location for expansion. Two further companies in Cameroon, Herakles and Biopalm, had begun operations in the country but abandoned these around the period of my stay and did not respond to my request. Environmental consultancies which are hired by plantation companies and work with them are also placed in this category.

Table 2 Details on interviewed industrial oil palm companies in Cameroon and Gabon

	Cameroon			Gabon	
	Company 1	**Company 2**	**Company 3**	**Company 1**	**Company 2**
Mature (ha)	34082	10288	8570	0	6500
Immature (ha)	5252	4619	0	23134	800
Percentage industrial OP in country	62.6%	23.7%	13.6%	76.0%	24.0%
Other details	Foreign ownership	State-owned	State-owned	Joint venture	Foreign ownership

For NGO and researcher interviews I used snowball sampling, starting from contacts I made in CIFOR, WWF and consultancy Proforest. Some also referred me to contacts in

companies. This sampling technique is a non-probabilistic, non-random way of recruiting research participants by asking an initial participant to refer to other suitable candidates (Biernacki and Waldorf, 1981). Here, each interviewee was asked if they knew anyone else who may have specific knowledge on the topics we had addressed. I finished the referral process when new information gained from interviews began to become sparse, i.e. when data saturation was taking place. Furthermore I independently contacted any other Cameroonian NGO which had participated in the 'WWF Private sector workshop' in February 2013 (as detailed in the report by Njie, 2013).

To reach national government officials in the forestry (MINFOF) and environment (MINEP) ministries I was aided by contacts in other research institutions and the local WWF office. In the case of the ministry of agriculture (MINADER) and the ministry of planning (MINEPAT) I and my research assistant independently visited the reception of the ministry and requested to be seen by someone with expertise on the topic. This is also how interviews with the divisional officers and local ministry representatives were arranged. The ministries we targeted in each location were: MINFOF, MINEP, MINEPAT and MINADER as well as the senior divisional officers. These were the ministries identified by the National Oil Palm Strategy as most important to the plantation planning process (Yankam Njonou, 2015).

I had intended to stay in two villages near a newly developed and/or planned plantation for a week each and conduct focus groups and a range of other Rapid Rural Appraisal exercises (Chambers, 2014). However, after arriving in the locality I was informed by people in nearby towns that due to the history of conflict around oil palm projects, staying there and asking questions about palm oil could be unsafe. I spent 24 days in the towns of Limbe, Kribe and Mundemba, relying on participant observation and chance encounters and informal discussions with local people to develop my understanding of how palm oil projects were seen locally. These towns are the respective Divisional headquarters of Fako, Océan and Ndian, three divisions in which expansion of industrial oil palm plantations was planned (Hoyle and Levang, 2012).

My sampling strategy, which relied entirely on the non-random methods of snowball and

purposive sampling, has a number of drawbacks as well as advantages. Due to its non-probabilistic nature, is impossible to determine the sampling error or make statistical inferences from the sample to the population. Therefore, the sample cannot be considered representative of the population interviewed. However, as the aim of this study was not to study a specific population and its perceptions and beliefs, but to understand a situation and it history, I believe that this is not of concern. In fact, loosely defining my target interviewees and asking for referrals by knowledgeable people has led to a more relevant sample of experts than had I chosen a population (e.g. all NGOs working on palm oil) and randomly selected from it. Within the time-constraints of the MPhil project, the speed of snowball sampling helped me find a large number of people who had valuable information on the topic. A final note of caution is warranted in relation to the methods used here and whether or not they can establish causality. While being careful to relate found information to other sources and cross-check these, it is never certain in what way exactly data such as interviewee perceptions are related to reality. Alternative scenarios cannot be investigated as a type of natural experiment; the particular details of the case studies make it hard to compare to other nations in for example South America.

Being an unmarried white female researcher from a privileged western background brought with it both advantages and disadvantages. There certainly was a social desirability bias. There was also regularly the expectation that I could or would provide help, both related to increasing the productivity of oil palm and more general issues. Interestingly, there was little evidence of interviewees or others believing I was primarily interested in conserving the environment. This facilitated open discussions as it prevented people from consciously biasing their answers towards pro-environment beliefs (Drury et al., 2011; Hammersley and Gomm, 1997). An exception to this may be the occasions where I was introduced to an interviewee by WWF, where social desirability may have led to biased answers. CIFOR, the main contact and formal partner of the project was perceived as taking a middle ground by generally favouring pragmatic development of oil palm but encouraging its sustainability.

2.2.2 Semi-structured interviews

Semi-structured interviews took place over Skype/phone (n=19) and in person (n=33) and lasted between 30 and 90 minutes each. I used one interview guide for all the NGO, company, government and research interviews (see appendix B) while allowing for deviation as is common in semi-structured interviews (Bernard, 2006). Some of the questions were designed to be very open-ended so as to allow for interviewees to co-determine the direction of the conversation (Newing, 2010). When relevant, I took notes on my impression of the interviewee and the situation the interview was held in. As some information given was directly contradictory to statements given by other interviewees or data obtained from the literature. As is common using semi-structured interviews I regularly made value judgements on their reliability, reflecting on the potential reasons for contention and the interview biases involved (Chew-Graham et al., 2002). Uncritically accepting information can diminish the value of interviews and thus content of these discussion must be 'analysed not only in terms of what people say but also how they say it and how the narrative evolves' (Drury et al., 2011: 20).

Three questions involved ranking and scoring of different factors for e.g. importance of a stakeholder group or costliness of a sustainability measure. Not all interviewees were willing or able to answer these questions and so there were fewer respondents for these questions than the general interviews. The aim of these exercises was not to conduct a quantitative analysis for statistical differences between groups, but to prompt more in-depth discussions on certain topics, and therefore to provide a different type of qualitative interview data. Interview guides were piloted in Cambridge with two students from Cameroon and Liberia, then revised and adapted again at various points early on in the interview stage. For example, questions on the quantity of available non-forested lands could be answered by none of the early respondents and removed from the guide.

The main topics addressed were:

- The current situation and future outlook with regards to industrial oil palm expansion in Cameroon and Gabon
- The decision-making processes that go into land allocation for oil palm, and the relative importance of different stakeholders in those processes
- Factors leading the industry towards more sustainable practices: sustainability criteria,

the role of environmental standards and commitments in the two countries' oil palm sectors
- Constraints to development of oil palm outside forested areas
- Collaboration of NGOs with other stakeholders

All interviews were recorded where the interviewees agreed on this, but for the interviews in Cameroon, many interviewees requested not to be recorded. I conducted interviews in French, Dutch and English. The research project received approval from the Ethics Review Group in the Department of Geography, University of Cambridge.

2.2.3 Participant observation

Informal discussions with people in Yaoundé and the three smaller towns provided helpful insight and context to the information gathered in interviews. While participant observation can require a large amount of time and a good understanding of the local language, it can aid in creating nuanced understandings of conservation issues (Jones et al., 2008). During chance meetings in the three smaller towns it would be common to be told about oil palm, plantation work and conflicts with companies *without* prompting people to talk about this. By chance we also witnessed an hour long argument about the dissatisfaction with an FPIC process (about a new quarry) between villagers, a founder of a local NGO and a company representative. While due to the short field season there are limitations to the information which can be gathered by participant observation, the contextual understanding I gained from this process was rich.

2.2.4 Field study area

Cameroon has 230 languages and administratively functions bilingually, with the majority of the country being Francophone and a smaller part being Anglophone. Most national and international NGOs active in Cameroon are based in Francophone Yaoundé. Very small local NGOs exist in certain towns in the current oil palm belt; these typically function within a larger network of national NGOs and receive funding from international bodies. Governmental power is highly centralised in ministries in the capital and particularly with President Biya and his non-formally represented allies (Emmanuel, 2012). Cameroon has ten semi-autonomous

regions, further divided into 58 divisions, each of which is led by Divisional Officers appointed by the president.

Currently, industrial scale palm oil is only grown in three regions: the Littoral, Southwest and South. Unlike most palm oil-producing countries in Asia as well as some African countries such as neighbour Gabon, Cameroon has a widespread non-industrial palm oil production with a profitable and expanding sector of small and medium-sized farms and artisanal mills which is thought to be equal in total acreages to the industrial farms (Nkongho et al., 2014a).

2.3 Africa as the new oil palm frontier

2.3.1 The expectations for the palm oil industry in Cameroon, Gabon and Liberia

Cameroon and Gabon sit prominently among a set of countries in West and Central Africa which in the last decade have been considered by foreign companies for potential large scale expansion of oil palm (Greenpeace, 2012; Hoyle and Levang, 2012; Penikett and Park, 2013). The Zoological Society of London (ZSL) states that over the coming decade up to 20 million hectares of new oil palm may be established in this region alone (ZSL, 2015). Lower numbers come from Richard Carrere from the World Rainforest Movement who reported that least 3 million hectares (ha) of land in Africa were targeted by 67 industrial oil palm companies of which Cameroon, Liberia and Gabon had the largest amount of concessions requested (Carrere, 2010). Feintreinie (2014) reports that by 2013 Cameroon had allocated 304,500 ha to new agro-industrial concessions and that a further 700,000 ha had been requested but were cancelled. This compares to 63,000 ha of industrial oil palm currently in production (Yankam Njonou, 2015). Neighbouring Gabon previously had only 7,300 ha in oil palm plantations and has now allocated over 200,000 ha to two companies: Olam and SIAT (Feintrenie, 2014; Rainforest Foundation, 2013).

In the wake of the announcements made about potential expansion, environmental organisations, researchers and media outlets began to express concern about the potential dangers to people and forests if Africa was indeed to become the palm's "final frontier" (e.g. Greenpeace, 2012, 2014; Rainforest Foundation, 2013; The Guardian, 2015). Joshua Linder, a primatologist, working in the Southwest of Cameroon wrote: *'Agro-industrial developments will soon emerge as a top threat to biodiversity in the African tropical forest zone. If proactive strategies to mitigate the effects of large-scale habitat conversion are not soon implemented, we can expect a rapid decline in African primate diversity'* (Linder, 2013, p. 25). From a desktop study looking at the overlap between great ape habitat in Africa with agroclimactic suitability for oil palm, Wich et al. concluded that *'the oil palm industry poses a significant and consistent*

threat to great ape species across Africa. (…) There is no doubt that a large number of oil palm concessions will be designated over the coming years' (Wich et al., 2014, p. 2,4). The IUCN/SSC Primate Specialist Group's Section on Great Apes wrote a policy statement on industrial oil palm expansion in great ape habitat in Africa (IUCN, 2014); delegates to the Great Apes Summit formulated a six-action point statement on oil palm expansion (GRASP, 2013) and, very recently, the Society for Conservation Biologists highlighted in a special position statement '*the rapid and unsustainable destruction of forests due to industrial oil palm expansion in West and Central Africa'* (Awoyemi et al., 2015, p. 2).

Various environmental organisations began projects related to the issue of oil palm development in Africa's forests (e.g. Greenpeace, ZSL, WWF, FFI, Solaridad, Proforest). A travelling information session on the RSPO aimed at awareness raising and capacity building, funded by international organisations, companies and the IFC, entitled the 'RSPO Roadshow' visited various African countries in 2012 and 2013 (ProForest, 2013). Efforts were made to develop national interpretations for RSPO guidelines (RSPO, 2015). As recently as February 2015, Arcus Foundation, because of their mandate to support great ape conservation, called an 'African Palm Oil Strategy Day' to examine research and funding needs for future interventions (Arcus, 2015). Industrial oil palm plantations have been portrayed as a key threat to biodiversity in West and Central Africa, with explicit warnings that the crop could cause – or indeed in some organisations' language: will cause – deforestation at similar scales as it did in Malaysia and Indonesia.

2.3.2 The current situation: What has actually happened?

The current state of the industrial oil palm industry in Cameroon does not match the expectations expressed in the reports cited above. Of the international companies which have formally expressed interest in developing oil palm in Cameroon none is currently actively developing their business (table 1). All but two left before acquiring specific concessions. Some of these businesses spent $100,000s on scoping work which included negotiations with national and local governments and scouting for appropriate locations. American Herakles Farms and Singaporean Biopalm were the only two new foreign companies with active operations in the

country. The former had established a nursery and cleared 2,500 ha of forest but has recently fired most of its staff and has suspended operations in the country (FFP, 2015; Greenpeace, 2014a). Biopalm was seeking over 200,000 ha in the country and had been allocated an initial 25,000 ha provisional license in the Océan region of South Cameroon in 2012. A formal Forest Management Unit was declassified for this plantation (Freudenthal et al., 2013) and the company had set boundaries for their project and begun negotiations with the local community. However, they had not embarked on the establishment of a nursery by the deadline of March 2015 – as had been demanded by the government – and the Ministry of Agriculture therefore withdrew their license.

Recently, the government implemented a maximum concession size of 20,000 ha per company. This policy intends to prevent situations in which companies clear forest on a very large scale without actively developing oil palm plantations but still making profits from timber – something which NGOs have warned government against based on experience in Southeast Asia. The new National Strategy for the Sustainable Development of Palm Oil – developed with the aid of various NGOs, in particular WWF – presents oil palm smallholder development as a priority above large scale plantations (Yankam Njonou, 2015).

The three existing plantation companies are all engaged in expansion of their oil palm operations. CDC, the large state-owned plantation company, has been developing small tracts of land into oil palm. In the last five years it has converted a 1,000 ha of non-forest (including an old banana plantation) and 700 ha of forest land for this purpose. They possess a large land bank and could develop further. However, according to some, the lack of funding and organisational efficiency is likely to make this process slow. Pamol is also owned by the state and has 9,500 ha of oil palm in production and a further 30,000 ha in its undeveloped land bank (Hoyle and Levang, 2012; Nguiffo and Sonkoue Watio, 2015). It is replanting on old plantations and has begun expanding oil palm in the Bakassi Peninsula in the Southwest of Cameroon in 2015. This mangrove rich peninsula has been contested by Cameroon and Nigeria until 2008. Now, to secure the area, the government intends to "colonise" it by planting

Table 3: Companies which have expressed interest in developing industrial oil palm plantations in Cameroon by year, country, area requested and status in 2015 (Feintrenie, 2012; Hoyle and Levang, 2012; Rainforest Foundation, 2013 and interview data)

Company	Year of public announcement	Country of origin	Initial number of ha searched	Allocated	Size of proposed investment	Status in 2015
SG SOC/Herakles Farms	2009	USA	83,000	73,000 in 2009, then reduced to 19,843 in 2013	300 million	Cleared 2,500 hectares and established a nursery. After years of opposition, the company suspended all its operations in 2015
Sime Darby	2011	Malaysia	300,000 - 600,000	40,000 initially	1.2 to 2.5 billion	Withdrew, citing issues with their Liberia plantation, plus the area proposed by the government of Cameroon contained too much HCV forest
Good Hope Asia Holdings	2011	Singapore	Unknown	N/A	200 million	Withdrawn
SIVA Group/Biopalm Energy	2011	Singapore	200,000	Initial 23,000	1.9 billion	Was given a provisional lease of three years; set up boundaries for proposed plantations. Government declassified a forest management unit (FMU) for the plantation, then this RSPO member lost their lease by foregoing action on the ground within the required time
PALMCO	2011	Cameroon	100,000	30,000	Unknown	Withdrawn
Smart Holdings	2011	USA	25,000	N/A	Unknown	Withdrawn
Cargill	2012	USA	50,000	N/A	390 million	Hired consultants to do scoping studies, then found insufficient contigous low carbon stock land and withdrew
Azur	2014	Cameroon	10,000	In negotiation	Unknown	Early negotiations and search for funding

oil palm (Potter, 2015). Interviewees mentioned that the usual procedures to acquire government licenses have been circumvented and Pamol has planted 1,000 ha of oil palm this year, with plans for more to come. The third entity active in the country is the French Bolloré group – which includes companies Socapalm, Safacam and Ferme Suisse. They produce 80% of the nation's palm oil production (Carrere, 2010). This company has a large land bank of which they intend to develop 10,000 ha until 2016. Around 1,000 ha is being cleared and expanded to and 9,000 ha would be replanted (Proparco, 2009).

In addition to these, Cameroonian soap company Azur has expressed interest in moving from solely being a palm oil consumer to a palm oil producer as well. The company has no commitments to international sustainability standards, and indeed, very little reason to join any because it will have a local market which does not demand Zero Deforestation palm oil. In 2014 they requested 10,000 ha for development plus a potential 50,000 ha for associated small-holder (Nguiffo and Sonkoue Watio, 2015). However, several interviewees believed that the company did not have access to funds needed to establish industrial oil palm and to support a viable smallholder scheme.

Thus in the past five years, about 5,200 ha of forest has been cleared for industrial-scale oil palm plantations in Cameroon: 2,500 ha by Herakles, 1,000 ha by Pamol, 1,000 ha by the Bolloré group and 700 ha by CDC. It is unclear how many hectares have been developed in forest by smallholders, but the amount is likely to be larger (Nkongho et al., 2015). Due to changing contexts, it is hard to predict how many hectares will be converted in the future. Currently, however, it is unlikely the number will be very high. Compared to the expectations of 100,000s of hectares of new industrial plantations which had been held by various actors as described above, conversion has been highly restricted. In contrast, total deforestation in Cameroon has been estimated at between 67,500 and 220,000 hectares per year (Ernst et al., 2013; FAO and ITTO, 2011)

Similarly, in Gabon forest conversion for oil palm is likely to be very limited. SIAT is

engaged in the replanting of old state plantations and Olam is now primarily planting on savannah grasslands. By taking into account sustainability criteria this company has chosen not to develop 60% of their potential concession area (Feintrenie, 2014). A similar pattern is apparent in Liberia. Out of concessions signed for over 750,000 ha, less than 20,000 has been planted up until this point (some forested, some degraded forest lands) (Raison et al., 2015). One company – a prime international player active in Liberia – report that they are likely to do very little future expansion in the country or elsewhere in Africa despite their original plans for major development in the continent.

Clearly, anticipated destructive deforestation for oil palm has so far not occurred in Cameroon, Gabon and Liberia on the scale feared by environmental NGOs. In fact, there is evidence that *'given the ever-growing importance of environmental and social factors, the sensitisation of local communities and government by NGOs of the risks of oil palm development to the environment and their livelihood, the few successful land development plans [in Africa] are those that have put environment and communities in front line of their activities'* (Bakoumé, 2013, p. 5).

In the next section I will outline the main events of note in the history of transnational palm oil advocacy.

2.4 A history of the transnational advocacy network around palm oil

2.4.1 Action taken by the transnational advocacy network: 1997 to 2015

The transnational advocacy network around palm oil developed over the past 18 years and it is seen as having been essential to the move of the oil palm industry towards improved environmental and social practices and corporate norms (Yaap, 2010). It has been argued that *'no other industrial sector has ever seen such a massive (extensive and broad) interference and involvement from civil society organisations in its operations'* (Wakker, 2013, p. 227). The attention of large international NGOs was captured after Indonesia's forest fires in 1997 became associated in part with oil palm expansion in the country (Pye, 2010). Two Dutch NGOs linked oil palm companies funded by Dutch banks with some of these fires and began campaigning for them to withdraw their investment (Wakker, 2013).

This campaign took an important next step with the collaboration between WWF and the Swiss retailer chain Migros in 1998 (D'Antone and Spencer, 2015). The two organisations aimed to set up a responsible purchasing project in support of more sustainable palm oil cultivation and were soon joined by others. Expanding the project, a group of NGOs, oil palm growers, European retailers, banks and others set up the Roundtable for Sustainable Palm Oil (RSPO) in 2004 to work towards making sustainable palm oil the norm in business (Hamprecht and Corsten, 2007). From 2007, the resulting RSPO Principles & Criteria and certification body became a mechanism through which 'certified sustainable palm oil' can be sourced at international markets. Some view the RSPO as a relatively successful instance of private governance (Midttun et al., 2010; Schouten and Glasbergen, 2011) while others see the institution as being ineffective or a "greenwashing" tool (Laurance et al., 2010; McCarthy and Zen, 2010). In 2008, 250 organisations signed an 'International Declaration against the Greenwashing of Palm Oil by the RSPO', insisting that commitments to sustainable palm oil should include Zero Deforestation agendas (Biofuel Watch, 2008).

With the continuing rapid growth of oil plantations in Indonesia and Malaysia and a

dissatisfaction with the solutions proposed by the RSPO, civil society activism expanded markedly from 2007 (D'Antone and Spencer, 2015; Khor, 2011). The diverse nature of the advocacy network quickly became apparent. NGOs focused on forest destruction were joined by NGOs which advocated better treatment of workers and indigenous people (Pesqueira and Glasbergen, 2013). Soon, reports on palm oil were published by watchdog groups and think tanks concerned with a great variety of topics including for example climate change, agrarian justice, North-South solidarity and anti-globalisation and taken up by mainstream media (Pye, 2010). By 2008 millions of people had seen videos or pictures which associated palm oil or palm oil-containing products (e.g. the Nutella campaign in France) with clear-cut rainforest, orphaned orangutans and stolen land (Pye 2010). At the same time, scientists conducted studies which supported claims that forest conversion to oil palm was highly detrimental to wildlife and ecosystem services (Fitzherbert et al., 2008; Foster et al., 2011; Koh and Wilcove, 2008) and celebrities such as Leonardo DiCaprio campaigned against 'massive deforestation and loss of many species' (Twitter, 2011). Furthermore, the Netherlands and Germany not only issued action plans to phase out the use of non-sustainable palm oil, they also encouraged other European countries to do the same (MVO, 2013). Amidst all this activity, smaller nationwide advocacy networks had arisen both in Indonesia and Malaysia as well as in Europe (Pye, 2010), and these increasingly joined up under a shared mission, with dense information exchanges typical of transnational advocacy networks (Keck and Sikkink, 2014).

The larger transnational network, and specifically some key international NGOs, began to make use of the nature of the transnational commodity chains essential to the palm oil industry by developing multi-angled campaigns by using those very same linkages within the industry which had made it strong in the first place (Pesqueira and Glasbergen, 2013; Pye, 2010). It is common for NGOs to utilise different strategies and tactics to achieve their goals (Barakso, 2010). Certain NGOs (e.g. SumOfUs and the Forest People Program) chose to primarily exert pressure and mobilize public opinion, others deploy an "insider approach" aiming to affect the behaviour of governments and companies through collaboration (e.g. ZSL), while some do both (here notably key players Greenpeace and WWF) (Yanacopulos, 2005). The palm oil transnational network would simultaneously involve such varied activities as running

highly public campaigns targeting well-known brands such as Nestlé's Kit Kat or Ferrero's Nutella; soliciting investors to demand improved practices; delivering well-researched reports highlighting the transgressions of the largest oil palm growers (Khor, 2011); lobbying with governments in producer and consumer countries; behind-the-scene discussions between NGOs, producers and buyers; working on the cooperative development of new sustainability standards and action plans for companies; and the careful monitoring of new palm oil projects. These and other individual steps were taken, and often repeated, by different actors in the network, sometimes after formal or informal discussions between them, sometimes acting independently.

2.4.2 The achievements

Evaluating the impact which directly results from single campaigns by NGOs and other actors in a transnational advocacy network is, to some extent, a subjective matter (Pilgrim and Harvey, 2010). However, looking at the changes in the palm oil industry in aggregate makes it clear that the transformation – in which norms around palm oil production moved from being profit-driven only, to include environmental and social aspect alongside commercial considerations – is of such a nature that the main driver for change is indeed the activity over the last 18 years within the transnational advocacy network. All the following "achievements" can be related back to direct or indirect influence of campaign action on palm oil or deforestation.

After insistent public campaigns by Greenpeace, starting in 2008 and culminating in 2010, Nestlé and Unilever were the first major palm oil buyers to commit to sourcing 'Deforestation Free' palm oil (see figure 1). A simultaneous effort focused on one of Nestlé and Unilever's main suppliers and the world's second largest oil palm producer: Golden-Agri Resources (GAR). HSBC bank was targeted as well and yielded to the pressure by helping to convince GAR to commit to strict sustainability standards; which the company signed under this pressure from the two multinationals, the bank and public campaigns in 2011 (Climate and Land Use Alliance, 2014). This multi-angled strategy used on GAR would be repeated to target various other businesses, many of whom yielded to NGO demands. In the same year the World

Bank and its private lending arm, the IFC, adopted a firmer policy on palm oil and deforestation (Paoli et al., 2010). Not long after, Norway's sovereign wealth fund, the largest of its kind in the world, divested from 23 palm oil companies because of concerns about deforestation and social conflict and announced a zero tolerance policy for either (Lang, 2013). Following its example, several pension funds and other institutional investors – worth a total of US$ 350 billion – came out with their own Zero Deforestation policies and wrote to production companies to pressure them to do the same (Reusner, 2014). On the policy level there were responses too. Firstly the European Union (2009) and the United States (2012) responded to calls from campaigners by restricting palm oil-based biofuels to those grown outside of HCS land; Secondly, various palm oil producer countries have started to develop national guidelines on sustainability (Brack and Balley, 2013).

Yet, the landmark change arrived when in December 2013, after years of pressure, palm oil giant Wilmar International announced their new 'No Deforestation, No Peat, No Exploitation by 2020' policy, which not only included their own plantations but also Wilmar's third-party suppliers (see figure 1). Wilmar is the most influential player in the market, both producing and trading oil palm (Climate and Land Use Alliance 2014): It controls 45% of the global palm oil market and more than 400 suppliers, over 80% of all growers, sell palm oil to Wilmar (Stecker, 2013). Wilmar's founder and Chairman Kuok Khong Hong acknowledged the role which Northern markets and environmental NGOs played in their decision. At the time, he reasoned that *'if the confrontation between the palm industry and the green lobby continues and palm oil's reputation continues to be tarnished by all the campaigns against it, eventually palm oil usage and prices will suffer and no one will be better off'* (Wilmar, 2014, p. 4).

With Wilmar's commitment, a tipping point was reached. Sensing success, campaign intensity was increased by NGOs, watchdogs and communities. In the six months following Wilmar's announcement, other major palm oil traders, growers and buyers made equally ambitious Zero Deforestation commitments, covering over 60% of all globally traded palm oil or $30 billion in palm oil sales (Climate and Land Use Alliance, 2014). Various companies began pushing other industry members and governments to accept the stricter standards, reminiscent of the 'California effect' (Cashore et al., 2007; Vogel, 2009) A number of interviewees

Figure 1: Timeline of important palm oil commitments made by various actors

emphasised that there is no return to "business-as-usual" in the sector, and that the events of late 2013 and early 2014 signify a radical turnaround for an industry previously seen as among the worst environmental offenders. It is easy to understate the importance of these new commitments. Yet the fact that 1) they include environmental and social standards which are immediate, measurable, and stringent and 2) members from all major stakeholder groups are involved, is a strong sign that a genuine global market transformation is on its way, following the aims set out by NGOs and other activists.

However, discursive commitments – even when accompanied by transparency, strategies, and measurable targets – are not equivalent to evidence that change has taken place where it counts: on the ground. New board level policies need to not only overcome institutional inertia, but also entrenched special interests, weak government institutions, and pervasive corruption (Climate and Land Use Alliance, 2014). In the next section I will explore evidence that transnational advocacy has been a key factor in reducing the amount of tropical forest that has been converted to oil palm in two central African countries.

2.5 The role of transnational advocacy in Gabon and Cameroon

In this section, I argue that the impact of the transnational advocacy network on the trajectory of development of oil palm in Gabon and Cameroon has been twofold: 1) the commitments made internationally changed the land selection processes used by companies; 2) parts of the network have been active in protesting against large companies on the ground and has made the prospect of developing in planned locations much harder. The latter focus of action is connected to the former by creating the impression that companies are being monitored for compliance to their social and environmental commitments in real time.

2.5.1 Land selection procedures

The high levels of forest cover in Gabon and Cameroon have turned out to be incompatible with the ambitions of oil palm growers with Zero Deforestation commitments who wished to develop plantations at the scale of 100,000s or even 10,000s of hectares outside HCS areas.

Among the interviewees from different groups there was a perception that NGO pressure had played a large role in changing where oil palm companies could develop new plantations, and that it was indeed the primary factor in this change. One representative of a company – one which had requested 100,000s of hectares in Cameroon but had withdrawn later after making Zero Deforestation commitments and discovering that very little non-forested land was available – spoke of the role of NGOs in affecting potential oil palm development in general:

> *'[Companies] tend to go where there is no NGO interference. NGOs are very much against deforestation. So [companies] are very scared. (…) There is no interference of NGOs when replanting. It has become a matter of replanting, just replanting. (…) But in Africa you cannot plant oil palm without… you need to deforest. So the future for our company in Africa is almost done. (…) NGOs are powerful because they make a lot of noise and have access to international media. That's all. NGOs are all together, all connected. (…) So they make a lot of noise using all means.'*

Another active company, on the challenge of finding land that will be suitable in the long run, emphasised the role that reputational risk, due to the vigilance of NGOs, plays in co-determining their decisions:

> *'You can't just assume that minimal compliance is going to be sufficient to placate sceptical stakeholders. We are in a very exposed and vulnerable position on the reputational front because palm oil has a pretty terrible reputation which has been embedded by years of activist campaigns. The risk and reputation management is essentially making sure you make the right decision and communicate them in a timely and transparent way with the people who may want to beat you up [in the future].'*

It is evident that by using the threat of damage to reputation, stakeholders in the advocacy network hold some influence over multinational corporations. The threat of a campaign alone and its consequences, including investor or consumer action, may be enough to alter a corporation's cost-benefit ratio towards improving their policy and engaging with NGO demands (Schepers, 2006). It is now not uncommon for businesses to be in regular contact with other stakeholders including those which could be viewed as their antagonists. The same interviewee as above explained that a Greenpeace campaigner:

> *'has come to our offices; we have shared information with Greenpeace, have shown them our HCV assessments, we've talked very openly with them about our challenges and about our concerns as well, about the way they approach things. I think that to date, there is an unspoken consensus that the campaigning NGOs are waiting to see how [our company's] experience develops (…) [so] we make sure that we are committed to RSPO certification from the start and that we make decisions about the way we select land, the way we accept land propositions. (…) None of that guarantees that someday activists… campaigners… won't come and bite us, but that's the risk you take.'*

Yet such "voluntary" collaboration by companies is not the only way through which the transnational advocacy network has affected land selection. It is widely perceived that the governments in Cameroon and Gabon are one of the key agents in determining where plantations can or cannot end up. Direct and indirect advocacy at the levels of both divisional

and national government agencies mirrored the company experience. One local official complained that *'NGOs cause problems. They write petitions, they disturb us all the time, and they cause violence.'* Another: *'Some NGOs come with very harsh policies.'* And in the capital: *'NGOs have a role to play but they are an obstacle for oil palm development.'*

Several international and local NGOs have chosen to take on a more supportive role. For example, they provide government and companies with technical support on how to find more sustainable solutions for the oil palm industry and work to expand markets for certified sustainable palm oil. Some international environmental NGOs have been embedded – sometimes physically – in the Ministries of Forestry and Environment of Cameroon. Hence, when concerns about oil palm expansion in Africa were first expressed, it became possible to advocate for sustainability from within. Examples of achievements made in this way include the Cameroonian policy to allow no company to access concessions of more than 20,000 hectares at a time; the progressive stance which the Liberian government has taken by requiring oil palm production within its borders to be RSPO certified; and the way in which the Gabonese government works closely together with NGOs and a researcher from a European university to find appropriate concession areas.

2.5.2 Local action changing local outcomes

When discussing the main constraints to oil palm development in Cameroon, various stakeholders, and especially oil palm producers, mentioned that "social risk" was a significant obstacle to operations. Opposition from local communities towards projects which they perceived to be undesirable could cause non-negligible damage to business (see section 3.5.3). There are cases where negative feelings from local communities towards oil palm companies were intentionally encouraged by small NGOs. Interestingly, these were all supported financially (albeit irregularly) by international NGOs in a way which is characteristic of transnational advocacy networks (Keck and Sikkink, 1999): information about issues on the ground was passed on to the larger NGOs and financial resources made their way from abroad to the small Cameroonian organisations in the vicinity of plantations.

The transnational advocacy network, through its local actors, is thus able to monitor any transgressions which may take place, in close to real time: if a company committed to certain procedures is, for example, planting on ancestral lands or HCS forest, within days local people will be likely to talk about this with an NGO, who would then contact national NGOs, who in turn have access to larger international organisations. It was believed by various interviewees in Cameroon, that in such cases it is likely that the information will be transferred to other parts of the network and acted upon.

In Cameroon, the active presence of the transnational advocacy network has been a strong impediment to the development of at least two large-scale oil palm plantations: Herakles and Biopalm. Furthermore, the dramatic history of the former case may be functioning as a deterrent to other prospective land buyers in Cameroon and beyond. American business Herakles Farm acquired a 73,000 ha oil palm concession in the Southwest region of Cameroon in 2009; 89% of the area was dense natural forest and lay right between four national parks (Greenpeace, 2012; Linder, 2013). From 2010 onwards the company was accused of breaking national and international laws, intimidation and corruption, using an inadequate High Conservation Value (HCV) assessment, acquiring and selling timber illegally and not consulting with local communities (Mittal and Mousseau, 2011; Nguiffo and Sonkoue Watio, 2015). At least seventeen Cameroonian and international organisations worked together to expose these problems (Greenpeace, 2013). The campaign reached international dimensions and caused outrage both within and outside of the country. The issue even became a diplomatic one involving France and the American Embassy; according to an interviewee, this way even President Biya was *'pushed to be more careful about managing the project.'* In 2012, the company was forced to leave the RSPO because NGOs showed it did not fulfil its requirements; in 2013, the government temporarily halted Herakles' forest clearing operations and permanently reduced their approved concession area from 73,000 ha to less than 20,000 ha (Ongolo, 2015). Finally, in 2015, all operations in the country were halted.

The second project, by Siva-owned Biopalm in the Ocean department of South

Cameroon, has been subject to similar scrutiny by local communities and local NGOs who function as intermediaries between communities and larger national NGOs such as the CED. While the proposed project was much smaller than originally intended, most of its 21,500 ha concession did consist of HCS secondary forest. Local NGOs, community leaders and local government officers near the Biopalm area were keenly aware of the Herakles case despite the two towns being 400 km apart. These stakeholders were, in their respective areas, planning and anticipating similar protest actions by communities as well as involvement of international NGOs for when the situation would call for this (Freudenthal et al., 2013; Greenpeace, 2014b). According to a number of interviewees, this was one of the main reasons why the Biopalm plantation did not get developed.

2.5.3 Low palm oil price and structural issues

The fact that despite the initial interest in Africa's agricultural lands, new industrial oil palm plantations have not taken off on a large scale may also have different explanations. One important argument used is that oil palm companies are retreating because of the low and declining palm oil market price (Ghazoul, 2015). Prices have been declining steadily since the beginning of 2014. The average CPO price for the ten year period between 2004 and 2013 has been $764 per tonne and in September 2015 dropped to a low of $480 (Index Mundi, 2015). The production cost of palm oil is lower than any other vegetable oil in the world (Carter et al., 2007): An estimate for average current production cost is $440/mt globally, with large differences across countries: the estimate is $350/mt for Malaysia and $660/mt in Colombia, for example (LMC, 2015). Costs of development in Africa are estimated to be about double those in Indonesia due to low labour productivity and import costs of e.g. machinery; the decreasing, and temporarily negative, margins may therefore have played a role in disincentivising palm oil companies to take up their concessions in African nations (Ghazoul, 2015).

This is, however, far from a satisfactory explanation. Most importantly, long term demand for oil palm is projected to increase steadily: for edible oil alone it could reach 240 Mt in 2050 or almost double current demand (Corley, 2009). Crude (petrol) oil prices are currently

low; with an increase, additional demand could be created for biofuel use. The World Bank predicts that after a low in 2015, palm oil prices will rise again steadily over the coming decade (World Bank, 2015). Furthermore, many interested companies withdrew before the palm oil price dropped (Ghazoul, 2015). Additionally, following an earlier drop in prices, Rafael Buhay Concepcion, board director at major company Golden Agri-Resources, when asked to comment on palm oil price fluctuations said that factors which are the foundation for the long term palm oil prices stay intact despite short term declines (Grant, 2012). This sentiment was mirrored by one of the interviewees when I asked him whether the price declines had played a role in his company's decision to withdraw from Cameroon:

> *"The low oil palm price is not a determining factor, because you know, prices can fluctuate. There is a trend that every five years it will go down, and then it will rise again. The real issue is finding sufficient land to plant, not the price."*

As oil palm does not produce for around three years following planting (Corley and Tinker, 2015), companies have to anticipate where prices will be in several years' time, and plan for the long term, not the current price.

Another sign that the price is not a major factor in determining estate expansion in Cameroon and Gabon are the activities by the Bolloré group. They are continuing to invest in replanting and in refurbishing palm oil mills in Cameroon, and despite low prices running profits nonetheless.

2.5.4 Summary

Many stakeholders believe that campaigns and advocacy work have created a drastically changed context for the development of industrial oil palm in Cameroon and Gabon. This, in combination with the high levels of forest cover in these countries, is likely responsible for the fact that despite the concerns expressed from 2009 onwards, little deforestation has taken place for industrial oil palm. Whether this will stay so in the future is unclear. Yet, environmental norms have taken hold in the industry and stakeholders such as African states appear to be aware of this. In the words of the Minister of Food and Agriculture in Ghana:

> *"There is an ongoing paradigm shift in the palm oil society towards sustainable palm oil production. The implication is that non-certified palm oil will gradually be removed from international palm oil trade (...) Africa risks losing out in oil palm production if it fails to mainstream sustainable measures into the production of the commodity."* (Mr Fiifi Kwetey quoted in Acheampong, 2015)

Perhaps then, in contrast with the fears which were felt several years ago, oil palm's "return to Africa", will not likely be the environmental disaster which it could have been, at least not in Gabon and Cameroon.

2.6 Further implications

2.6.1 Accountability and sovereignty

While the history of the campaigns against palm oil can be read as cause for optimism in relation to the protection of tropical forests (Climate and Land Use Alliance, 2014), it is essential to consider how this has affected the sovereignty of (African) governments and the agency of their inhabitants. NGOs and the transnational networks they form part of have become increasingly influential in international and local politics (Jordan and Van Tuijl, 2000; Simmons, 1998). In essence, they become the voice of "the public" or "the planet", yet they are not democratic or even representative organisations (Hilhorst, 2003; Pilgrim and Harvey, 2010). NGOs have an 'upward accountability' towards their donors and a 'downward accountability' to those who experience the outcomes of their advocacy (Stirrat and Henkel, 1997).

The governments of the African nations which are producing oil palm have shown strong commitment to industrial development of the crop, partly by creating conducive environments for foreign investments (Bakoume, 2013). The important national strategies communicated in Cameroon's 'Vision 2035' and 'Emerging Gabon' both see oil palm as a way to develop and diversify the domestic economy and acquire foreign exchange (Gabon Emergent, 2012; Republic of Cameroon, 2009). While Gabon's collaboration with Olam and SIAT may help the country to achieve this, for Cameroon the situation is different. As described before, new foreign investments into oil palm at the scale desired are unlikely.

Is it acceptable for Northern NGOs – or national NGOs who rely on their funds – to influence development outcomes in such a way as to go directly against the will of the state where this development would have taken place? How is this question affected when taking into account political corruption and inefficiency in the countries in question? What exact responsibilities come with taking action and where are these responsibilities located within the amorphous network? In the face of the power which transnational advocacy networks exercise, it is key for researchers to engage with these questions.

2.6.2 Conservation scientists and transnational advocacy networks

That transnational advocacy has arguably transformed land selection procedures and the outcomes for the oil palm industry is of importance to conservation scientists. The power embedded in certain transnational advocacy networks and their actions could be harnessed for a variety of conservation goals. By being aware of the possibilities that these new structures possess, conservationists can decide more mindfully about whether they wish to actively engage with any particular transnational advocacy network and, if so, in what capacity (e.g. as public campaigner, information provider, mediator between business and NGO and so on).

In the case of the palm oil network, social and environmental researchers did take part in, for example:

1) Drawing attention to particular problematic projects.
2) Consciously working to provide evidence of the positive and negative social and environmental impacts of oil palm developments and the importance of the ecosystems which oil palm plantations were likely to replace, with awareness that this would be used in campaigns.
3) Proposing alternatives to the business-as-usual framework.

Yet, there could be further roles that this stakeholder group could play. Notably, not all issues which could warrant an intervention are championed by a transnational advocacy network. These networks are in fact highly selective about the issues they choose to work on (Carpenter, 2007); a specific environmental "bad" requires a ***definition as a problem*** by a "norm entrepreneur" (Keck and Sikkink 1999) and ***adoption*** by major "gatekeepers" such as high-profile NGOs or media (Bob, 2005). Explanations on why they mobilize around certain concerns at a certain time, and not around others or at a different time, have not yet received much attention from empirical researchers (but see Carpenter 2007). Yet, if these networks are effective, the result of this usually informal selection process could be very important for conservation outcomes. Researchers could, if they chose to do so, play a vital role as norm entrepreneurs by encouraging important gatekeepers to take up precisely those issues which

their work has shown to be important.

2.6.3 The focus of transnational advocacy networks

Some media outlets, scientists and other organisations – including some within the network – appear to be unaware, at least in their public statements, of the great discrepancy between expected oil palm expansion in Africa and actual realised expansion (e.g. Arcus, 2015; The Guardian, 2015). Inertia can be a characteristic of any large structure and may delay appropriate responses to changing circumstances. While some of the continued concern for "mass destruction" may play a role in assuring that the palm oil industry remains under great scrutiny and is thus incentivised to act responsibly, there could also be some negative consequences.

Firstly, allocating resources intended for tropical forest conservation to the issue of 'oil palm in Africa', may no longer be an effective way to assure reduced deforestation or loss of wildlife; other issues such as bushmeat hunting may be in more pressing need of attention and resources (Linder and Oates, 2011). It is worth considering whether crops which have not been the focus of a transnational campaign have expanded in recent years. In Cameroon, the three crops whose areas under production have grown far more quickly than others from about 2000 are sorghum, maize and cocoa (see figure 2)(FAO, 2015). Among these, cocoa is the only which is grown as cash crop for export. The area under cocoa cultivation remained around 365,000 ha between 1990 and 2000 and then increased to 670,000 ha in 2010 (FAO, 2015). New cocoa often replaces forest in Cameroon (Kazianga and Masters, 2006). As an example then, cocoa being another product with its main market in the north where leverage can be created, existing transnational advocacy networks could consider widening their focus to include it or other drivers of deforestation. In Gabon – which only has a fraction of the cultivated area of Cameroon – the area under cocoa plummeted in the mid-90s (figure 3).

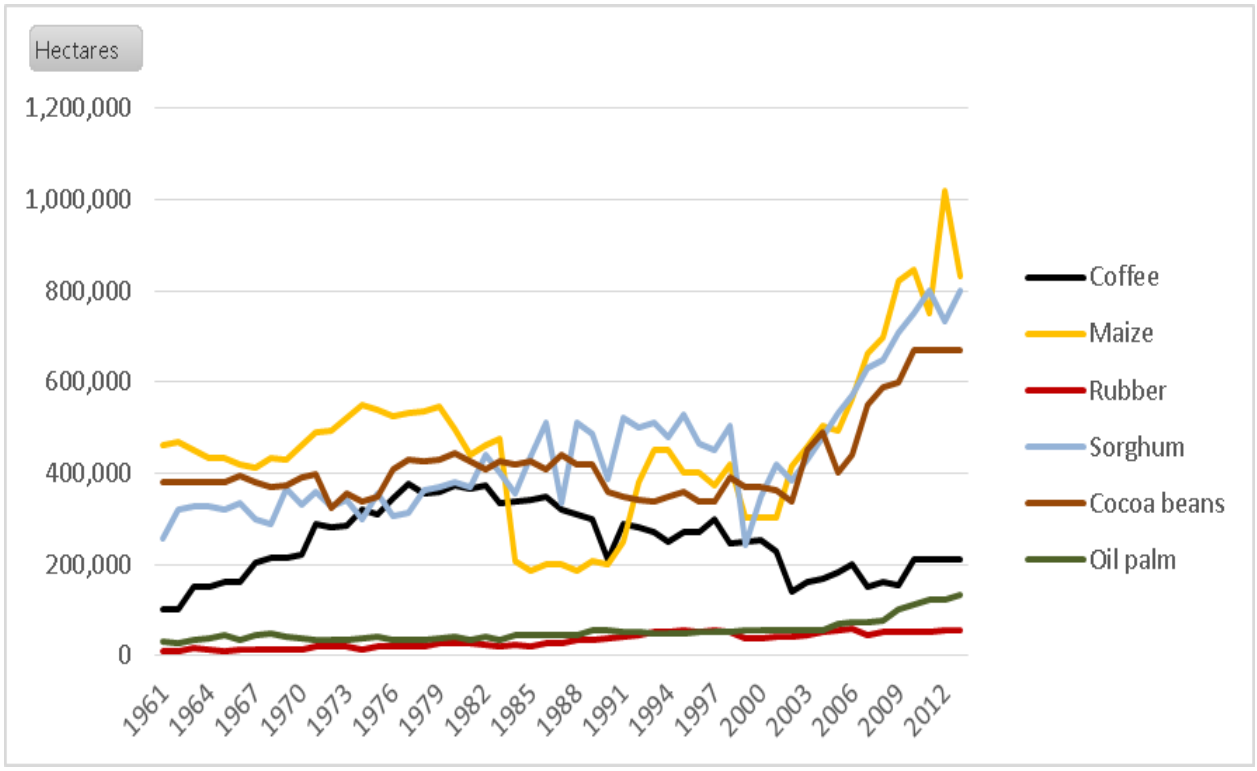


Figure 2: The area under cultivation for different crops grown in Cameroon in hectares (data from FAOSTAT 2015)

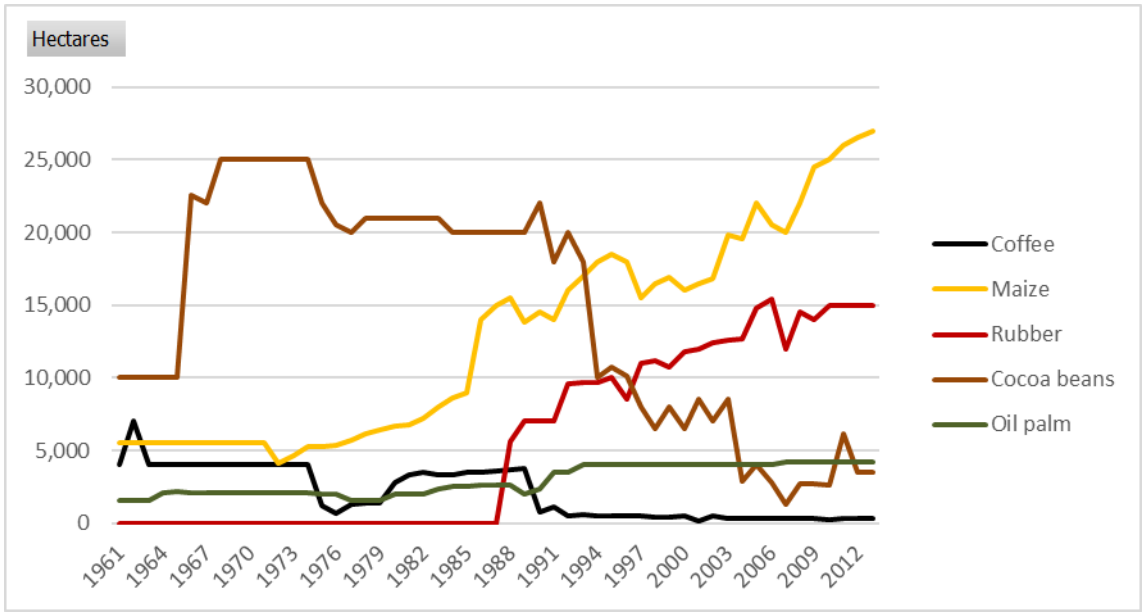


Figure 3: The area under cultivation for different crops grown in Gabon in hectares (data from FAOSTAT 2015)

Another issue is that misleading or unverified accusations of continued environmental or social transgressions by oil palm companies (also called "blackwashing") could prove counterproductive in the long run (Koh et al., 2010). While exaggerated claims may, for example, increase donations to an NGO or attract public attention to an issue, in the long term this will damage the trust in NGOs and undermine general support for conservation purposes (Koh et al., 2010). Moreover, the transformation of the palm oil industry could function as a success story which will motivate consumers to engage with other conservation issues as well. New behavioural norms, such as making conscientious consumer choices, are more easily formed when information about previous success and their consequences are known (Monroe, 2003).

Some of the NGOs who have campaigned against certain oil palm businesses do in fact publically applaud the attainments of these companies when change is achieved (e.g. WWF, 2013). Yet the perception of the oil palm industry as a whole is still that of an sector which is associated with large scale deforestation, social injustice and the killing of wildlife (Khor, 2011).

2.7 Conclusion

From its humble beginnings in the late nineties to the large global campaigns which it runs today, the transnational palm oil advocacy network has been key in transforming market norms. Zero Deforestation policies have become enmeshed in the business plans of a large proportion of oil palm producers and buyers and these themselves are now pushing for more widespread acceptance of standards. Despite the relatively limited demand for palm oil in the North, the environmental concerns which have been expressed in Europe and the US have been essential to achieving global change in the industry. With this study, I have put forward evidence that the discursive commitments made in recent years have altered the trajectory of development of oil palm in Gabon and Cameroon. It is of interest whether a similar effect is experienced in other nations across the tropics.

The diverse nature of the tactics and actors involved in the palm oil campaign has been vital to its ability to achieve its aims. A persistent cooperation between similar-minded NGOs, journalists, academics, governments and others has allowed the issue to be addressed at a variety of levels. Now that the implementation stage of the Zero Deforestation commitments has begun, there is great need for a similar transnational cooperation to flourish: this time one which also involves former antagonists such as palm oil buyers, traders, investors, and producers of palm oil. Such a network will need to regularly adapt sustainability standards, improve practices, monitor projects and, importantly, effectively communicate to the wider world the progress which is being made in this otherwise widely criticised industry.

Chapter 3
Carbon thresholds and the future of industrial oil palm in Gabon and Cameroon

3.1 Introduction

3.1.1 Zero Deforestation and the future of oil palm in Cameroon and Gabon

Scientists and NGOs have identified the use of 'degraded areas' for plantation agriculture as a way to increase agricultural production while conserving forests (Dinerstein et al., 2015). Various studies have pointed to the widespread availability of such areas, with estimates varying from 1 to 6 billion hectares globally (Gibbs and Salmon, 2015)[2]. Yet defining and spatially identifying such areas continues to be a challenge; there is no consensus as to 1) the definition of non-forested or degraded land, 2) the extent of this, and 3) its location both globally, and within particular countries (Gibbs and Salmon 2015). This is an obstacle for oil palm growers and buyers with the intention to eliminate deforestation. Furthermore, for many agricultural producers, there is little to no direct commercial or legal incentive to commit to expanding plantations outside of forested areas. In fact, doing so may carry a cost (Buys, 2007). Zero Deforestation pledges made in the oil palm sector have now provided a stimulus for plantation developers to plant within degraded, cleared or non-forested areas (Climate and Land Use Alliance, 2014).

As discussed in chapter two, these commitments were made in response to civil society pressure and have already influenced the trajectory of oil palm development in Gabon and Cameroon in recent years. Yet, where oil palm can be developed in the future by companies which

High Carbon Stock definitions

HCS forest A tropical forest area with high biomass

HCS concept The proposition that Zero Deforestation can be operationalised by looking at aboveground carbon content of an area

The HCS Approach The land selection methodology developed by GAR, Greenpeace and TFT

HCS+ The land selection methodology in development by the 'HCS Study' group including Sime Darby, Cargill and others

[2] For context, current cropland surface is 1.5 billion ha across the globe (FAO 2015).

have made Zero Deforestation pledges, depends in part on the precise definition of 'forest' (Gingold et al., 2012). The High Carbon Stock (HCS) concept[3] was proposed by influential stakeholders in 2010 as a way to find such a definition and to operationalise the various Zero Deforestation commitments made (Paoli, 2014). There have broadly been two groups working on interpretations of how to measure and define HCS forest. The differences between the resulting methodologies may have far-reaching consequences for the future development of certified sustainable oil palm in Cameroon and Gabon, or indeed for tropical forests worldwide.

3.1.2 Methodology one: The '*HCS Approach'* by Greenpeace, GAR and TFT

In response to intense campaign pressure from Greenpeace, one of the first meaningful Zero Deforestation pledges by a palm oil grower was made by Indonesia's largest oil palm producer: Golden Agri-Resources (GAR). In 2010, the company began to collaborate with Greenpeace and nonprofit organisation The Forest Trust (TFT) to pioneer a methodology to identify forested areas where oil palm should not be planted. They termed their method the *HCS Approach* and stipulated that it should always be used in concert with HCV and FPIC methodologies (HCS Approach, 2015). Between 2010 and 2014 this approach was piloted in Indonesia and Liberia and it has recently been presented as a toolkit for use by other actors (HCS Approach Steering Group 2015). The *HCS Approach* is a method for site selection involving satellite image analysis and forest inventory which stratifies vegetation in a given area into different carbon classes (see figure below). With the exception of small patches of 'non-viable' HCS forest, the areas in the concession classified as HCS are to be conserved by the company together with local communities (HCS Approach Steering Group 2015).

Initially, a provisional carbon threshold of 35 tonnes of carbon per hectare (tC/ha) was used as a rough cut-off point between 'high carbon stock' and 'low carbon stock' (figure 4). The number was based on the fact that throughout a typical oil palm life cycle, the average amount of carbon stored in above ground biomass is 35 tC/ha (Germer and Sauerborn, 2007). Pilot

[3] Despite its name, the HCS concept was not developed to maintain forests' function as carbon sinks, but to conserve tropical rainforests, their flora and fauna and the ecosystem services which they provide (HCS Approach, 2015).

studies then established between what vegetation strata this threshold fell. Later, the approach was turned upside-down: now vegetation strata are used to define the HCS cut-off point, with estimates of above ground carbon content as an aid to distinguish between different types of vegetation (HCS Approach Steering Group 2015). A key element of the *HCS Approach* is that it aims to create a consistent methodology which can function in different geographical areas, now and in the future.

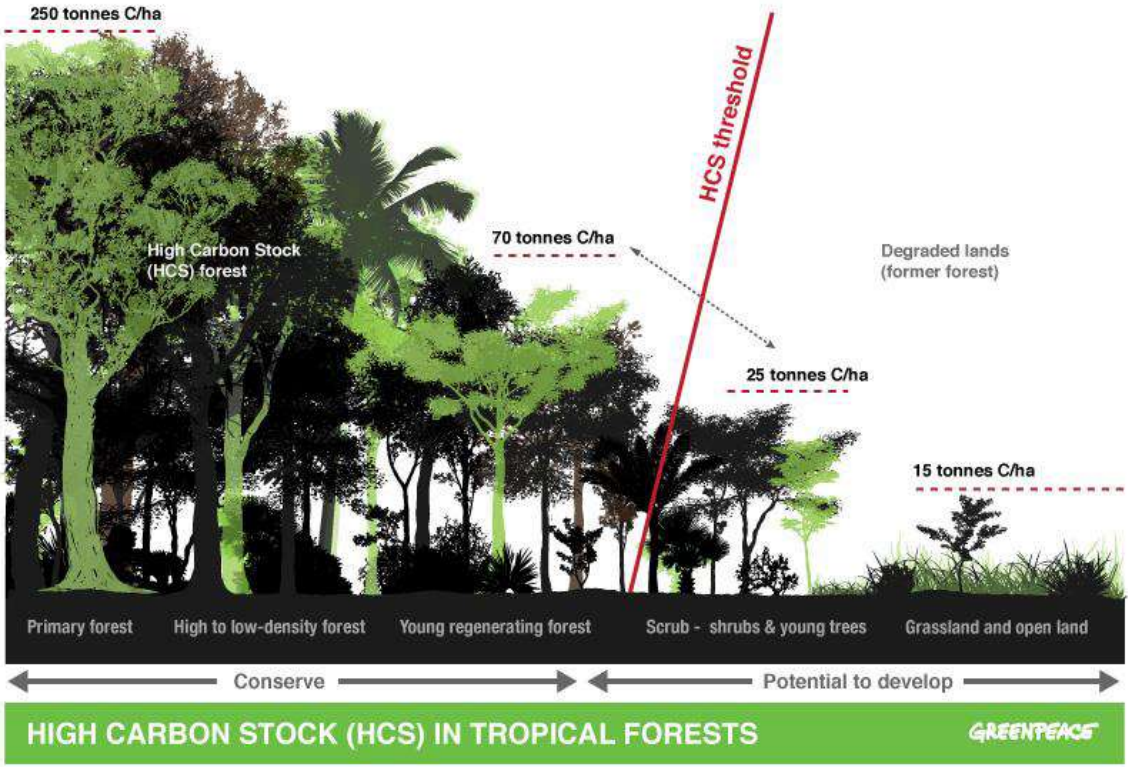


Figure 4: 'The HCS Approach' vegetation classification (Greenpeace, 2014c)

3.1.3 Methodology two: '*HCS+*' by large industry players including Musim Mas, Sime Darby and Cargill

A different set of actors, primarily large oil palm plantation companies, together responsible for 9% of the global palm oil production, have united under the 'Sustainable Palm Oil Manifesto' (2014). They began conducting 'an independent in-depth study and consultation process' to re-define HCS in 2014, thereby creating a new site selection HCS methodology which

they entitle *HCS+*. Their methodology includes an explicit intent to develop separate, flexible definitions of HCS for different geographic regions. They stated:

> *'To achieve the long-term protection of HCS forest areas and ensure pragmatic implementation, a range of HCS strata will be developed to account for social, economic and political factors in different geographies and economic developments, e.g. the development needs of fragile economies should not be compromised or hampered.'* (Sustainable Palm Oil Manifesto, 2014, p. 7).

While their study is ongoing at the time of writing, the above statement implies certain practical differences with the *HCS Approach*. First and foremost, socio-economic conditions influence which areas are considered HCS and non-HCS, as opposed to this being determined by actual carbon stock and vegetation structure alone.

Consequently, additional to an aboveground carbon threshold equal to carbon neutrality for land clearance (similar to the *HCS Approach*'s starting point of 35 tC/ha), *HCS+* uses two higher thresholds. The second is a threshold of 50 tC/ha[4] which can be used whenever there are '*expected improvements in livelihoods'* on a national or subnational level (Raison et al., 2015). An undefined, third threshold can be used only in:

> *'heavily-forested countries where there is an urgent need for further socioeconomic advancement, whether at the local or national level. In these situations, there are opportunities to use an integrated landscape planning approach to identify forests which should be conserved and those which can be carefully developed'* (Raison et al., 2015, p. 10)

This third threshold may have significance in certain African nations including Cameroon. Firstly, due to high levels of forest cover in the areas suitable for oil palm, with the *HCS Approach*, little land would be considered suitable to convert into oil palm in Cameroon and Gabon. Secondly, Cameroon is considered a country with low socioeconomic

[4] This will usually be quoted as 75 tC/ha in the HCS Study material. *HCS+* considers that aboveground biomass (AGB) is 'not the total carbon stock of an 'HCS' forest. The guiding 100 t AGB translates into a total 'biomass-related' stock (i.e. AGB + roots + dead wood) of c. 150 t dry weight or 75 tC/ha carbon'

development; in terms of purchasing power (PPP) GDP per capita it is ranked 149 out of 185 countries and its Human Development Index (HDI) ranking places it 152nd (UNDP, 2014; World Bank, 2015). Gabon is different. With its PPP GDP per capita almost 7 times higher than Cameroon primarily because of oil, it is ranked 58th in the world (World Bank, 2015). It is likely then that for some African nations, including Cameroon, the *HCS+* methodology will allow a carbon threshold higher than 50 t/ha; so as to avoid compromising the *'development needs of fragile economies'*.

3.1.4 Implications of different carbon thresholds for development of oil palm

Trade-offs between environmental conservation and economic development are arguably inevitable (McShane et al., 2011). Decision-makers may decide in favour of economic development at certain times, in certain places (Adams, 2003). Thus, given particular conditions, for example the high levels of forest cover and low levels of economic development in parts of Africa, some may support an increase of the carbon threshold level in a land selection methodology. However, before doing this, it is vital to understand the potential spatial implications of these changes in terms of environmental outcomes. Furthermore, it is important to be explicit about the arguments in favour of such an increase and critically examine their underlying values. A careful examination is key because the adoption of either the *HCS Approach* or the *HCS+* methodology may become widespread in the future. While the HCS tools are currently used only by the oil palm and pulp industries (HCS Approach, 2015), if successfully formulated, unified and put into use, it may become a model for Zero Deforestation development of other tropical commodities like rubber, bananas, coffee and cocoa.

3.1.5 Structure of this chapter

In this chapter I combine the results from a spatial analysis and a qualitative study to examine how oil palm development in Cameroon and Gabon may be affected in the future by a change in HCS methodology and accompanying carbon thresholds. This is done in three steps:

(Raison et al., 2015, p. 10). Yet important here is that 50 tC/ha is what is ultimately measured.

- The spatial analysis examines the potential consequences of moving from the *HCS Approach* with a 35 t/ha aboveground carbon threshold to a *HCS+* methodology which has a higher threshold.[5] Specifically, I will create a map showing the additional zones in Cameroon and Gabon which would be placed at risk of conversion were the threshold to double. For this area in Cameroon I then consider current land cover, human population density and its importance for wildlife conservation
- In the qualitative part of the study I discuss the social, commercial and geographic obstacles which exist in relation to the development of industrial oil palm within a HCS framework with either a 35 tC/ha or a 70 tC/ha threshold. Here I aim to understand the trade-offs which exist between the environmental, social and commercial aspects of plantation projects.
- Finally, based on the two other sections of this chapter, I examine the arguments for and against increasing the HCS carbon threshold above 35 t/ha.

[5] The typical aboveground carbon content in central African dense forest is around 230 t/ha (Fongnzossie et al., 2014; Lewis et al., 2013)

3.2 Mapping methods

I created a series of maps to show what areas would be available for plantations developed in Gabon and Cameroon under different carbon thresholds for Zero Deforestation commitments, and which would therefore be at risk of conversion if such thresholds were adopted. This resulted in three complementary zones of interest, all agroclimatically suitable for oil palm and outside of protected areas:

- Lowest carbon zone: based on the 35 tC/ha threshold originally used by the *HCS Approach* which is equivalent to the average amount of carbon stored over the lifecycle of a plantation
- At-risk zone: between 35 - 70 tC/ha zone. Area which would open up for Zero Deforestation oil palm under possible new criteria. As there is, as of yet, no indication of a set upper boundary for the third *HCS+* threshold, I have chosen to illustrate a change by doubling the above.
- High carbon zone: Carbon stocks higher than 70 t/ha

At times I combine zones as follows:

- All suitable zones: No carbon threshold considered
- Under-70 tC/ha zones: lowest carbon and at-risk zones combined

Next, a comparison was made for these zones, for Cameroon only, for a range of land use and biodiversity-related variables.

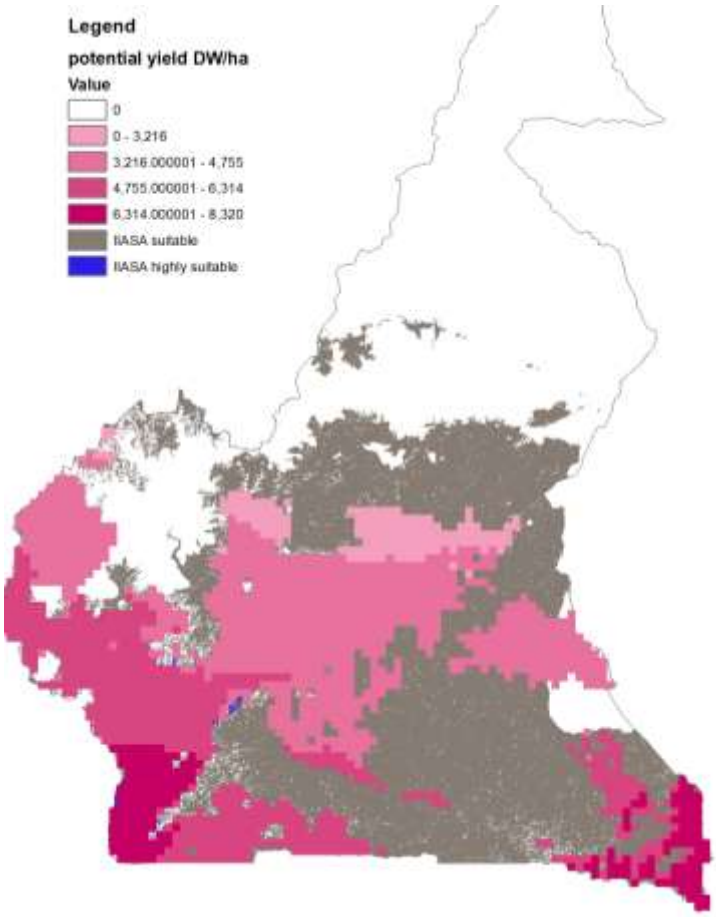
3.2.1 Geographic datasets and sources

The geographic datasets used in the analysis varied in their original projections and resolutions. I resampled each of the datasets to the commonly Eckert IV equal-area projection, and a grid size of 100 m. All mapping and analysis was conducted in ArcGIS 10.0.

Agronomic suitability

The agroclimatic suitability of land for the cultivation of oil palm depends on a number of factors. Soil type, rainfall patterns and slope are of particular importance in determining the yield and thus profitability of a plantation placed in a specific area. I used an oil palm suitability map created by Pirker and Mosnier at the International Institute for Applied Systems Analysis (IIASA)(2015). At a resolution of 1000 m the map is far more detailed than the best available alternative: the GAEZ crop suitability index map by FAO, with a resolution of 10 km (Fischer et al., 2012). The area depicted as suitable for oil palm differs substantially between the two maps but I have chosen the more extensive IIASA dataset because of its resolution (see figure 5). I considered all the areas defined as *perfectly suitable*, *highly suitable*, and *suitable* as suitable for oil palm for the purposes of this analysis. Current industrial plantations in the countries exist in each of these categories, but not in areas classed as having *moderate suitability* or less.

Figure 5 Difference GAEZ and IIASA oil palm suitability maps in Cameroon



Protected areas and water bodies

I identified formally protected areas (including RAMSAR sites) in Gabon and Cameroon with the World Database on Protected Areas (IUCN and UNEP-WCMC, 2010). Forest Management Units (FMUs), or areas formally reserved for logging are mapped by the Interactive Forest Atlas (Global Forest Watch, 2012). To identify water bodies I used The Global Lakes and Wetlands Database (Lehner and Döll, 2004) and data from the Interactive Forest Atlas (Global Forest Watch, 2012).

Aboveground carbon content

The two most commonly used global tropical forest carbon maps suffer from underrepresentation of field data in the Congo basin and agree least in this region (Mitchard et al., 2013). Therefore I used two different maps, with different resolutions, created with a different methodology, which were specifically developed for the countries in question. For Cameroon a fine resolution (27 m) aboveground biomass map was created as part of the Reducing Emissions due to Degradation and Deforestation in Africa (REDDAF) project (Haeusler et al., 2012; Mermoz et al 2013). It was based on in situ data collected over a representative region in Cameroon, and combined with fine-grained satellite data from the Japanese ALOS PALSAR data from 2007 over that study site and the whole of Cameroon. I converted aboveground biomass to carbon by multiplying the value by 0.5. For Gabon, I used the somewhat coarser biomass map (250 m) by Saatchi et al. (2015, unpublished data) and used the same conversion factor. Four small areas with peat soil were identified with the help of the Soil Atlas of Africa (Jones et al., 2013)

Land use and current oil palm

To understand current land uses in Cameroon I used the European Space Agency's land cover map for 2010 at a resolution of 300 m (Bontemps et al., 2015) and the UNEP/GRID - Sioux Falls Dataset of global population density (Nelson, 2004). To simplify the most important categories of the former I combined the three categories of cropland into one and the two natural vegetation mosaic categories into another. The precise locations of smallholder oil palm

farms are not known (Yankam Njonou, 2015). For the industrial plantations, while maps of the concession areas exist, there is no differentiation between undeveloped forest, other types of plantation and oil palm plantation.

Areas important for wildlife

I firstly, used species richness maps for threatened and small-ranged species in a 10km grid derived from digital species distribution maps from the IUCN for mammals, amphibians, birds (Jenkins et al., 2013). Secondly, Greenpeace's Intact Forest Landscape maps identify intact areas of forest which in 2013 were larger than 20,000 ha. Such a landscape is defined as: an unbroken expanse of natural forest ecosystems showing no signs of significant human activity, and large enough that all native biodiversity, including viable populations of wide-ranging species, could be maintained (Potapov et al., 2008). Thirdly, Important Bird and Biodiversity Areas (IBAs) are sites recognized as being globally important habitat for the conservation of birds and other species (BirdLife International, 2014).

3.2.2 Analysis

I developed a base layer which depicts those areas which – in the absence of other environmental, social, or economic concerns – could potentially be suitable for growing oil palm. Protected areas were excluded from the suitability map as commercial agriculture is generally prohibited in these locations. Secondly, I divided the base layer into three different zones according to carbon content. Areas with peat soil were placed in the high carbon zone as both HCS methodologies consider below-ground carbon stored in peat as prohibitive for development (Raison et al., 2015).

The remainder of the analysis was concerned with Cameroon only; for the three zones I considered a variety of factors. Firstly, I overlaid the maps of these zones with the land cover map and determined their overlap with the four most common land types, combining the rest into a fifth category. Secondly, I overlaid the zonal map with that of human population density. I divided this into two groups: 50% of cells with population densities above the median density

and 50% with lower density. Thirdly, I examined two indicators to see how changing carbon thresholds in an HCS methodology could affect the environmental impacts of producing palm oil in line with Zero Deforestation commitments. I assessed where the lowest carbon and at-risk zones overlap with Important Bird and Biodiversity Areas (IBAs) and large intact forest landscapes (IFLs). I then compared these zones plus the high carbon zone with the country as a whole, for the distribution of the species richness of threatened and small-ranged amphibians, birds and mammals per 10 km grid cell.

3.2.3 Limitations of the analysis

This analysis serves as a spatial illustration to accompany and confirm some of the results from the qualitative study in this paper (e.g. there is very little suitable land available in Cameroon which has a carbon stock below 35 t/ha and is not inhabited by people). However, limitations to both the reliability and the scale of the datasets used mean that this part of the study must be interpreted with care.

A number of issues arise from a lack of detailed data collection in Central Africa. Importantly, the IIASA dataset I chose to use has, most likely, somewhat overestimated the area agroclimatically suitable for oil palm by accepting long dry seasons into the model (although with irrigation and/or new breeding techniques drought-tolerance may be improved in the future (Cochard et al., 2005)). A key limitation to both suitability maps is that the quality of soil data is rather low (Pirker and Mosnier, 2015). Furthermore, as influential factors such as seasonal flooding or terrain roughness are not included, the suitable area may be smaller than the analysis suggests. The IUCN species range data is also limited: much of the distributions of wildlife in central Africa are not well described or located, and the maps used are likely to contain both omission and commission errors (missing true areas of occupancy, and indicating presence where species are not in fact present) (Rondinini et al., 2006). The human population density maps were based on census data. This type of data collection is famously flawed in the context of complex African kinship patterns (Cleland, 1996). Furthermore, widespread rural-to-urban migration alongside high rates of population growth may mean that current population densities are either higher or lower than was estimated fifteen years ago (de

Brauw et al., 2014). For the carbon map of Cameroon, considerable uncertainties exist due to incomplete sampling; in addition, the authors of this data set note that the loss of biomass since 2007 in the savannah-forest mosaics due to anthropogenic disturbances is likely, thus resulting in larger lowest carbon and at-risk zones than mapped (Mermoz et al., 2014).

3.3 Mapping results

3.3.1 Carbon thresholds and suitability

The proportion of land which was *suitable* or *highly suitable* for oil palm cultivation in Gabon and Cameroon is roughly similar, yet Cameroon had a larger percentage of *suitable* low carbon stock land than Gabon (figure 6). In absolute terms, Gabon had twice the amount of *highly suitable* land than Cameroon did and less than half the amount of *suitable* land.

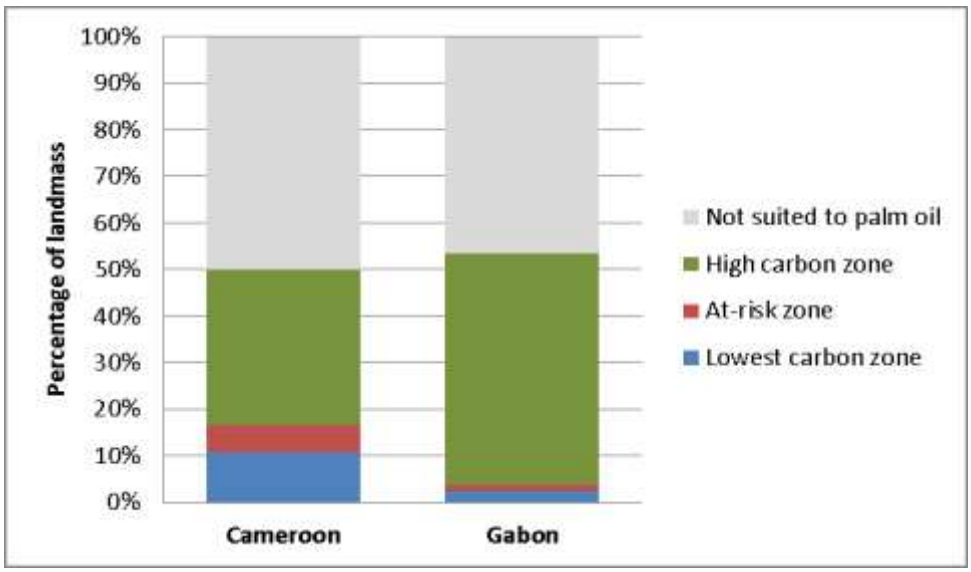


Figure 6: Percentage of landmass Cameroon and Gabon suited oil palm cultivation in the different zones

Of the 23.5 million ha of *suitable* and *highly suitable* land in Cameroon, just over 5 million ha (10.8% of Cameroon) fell in the lowest carbon zone, with less than 35 tC/ha. Doubling the threshold increased the available area to 7.7 million ha (figure 8). In most cases, *suitable* areas in the at-risk zone were interspersed finely with those in the lowest carbon zone (see insets of figure 8).

Of over 13 million ha classified as *suitable* or *highly suitable* in Gabon nearly 700,000 ha or 2.4% of the country fell in the lowest carbon zone. Of this 110,000 ha were categorised under the *highly suitable* class. Doubling the threshold increased the available area to 1 million ha of which 180,000ha was *highly suitable*. The less fragmented, larger tracts of land which were *suitable* in both these zones fall in the south and southeast regions of the country (figure 10).

Figure 7: Carbon intensity on suitable land area in Cameroon. The area over 75 t/Cha is masked and may in fact contain up to about 200 tC/ha. The map also shows the locations of IBAs, IFLs, PAs and Ramsar sites

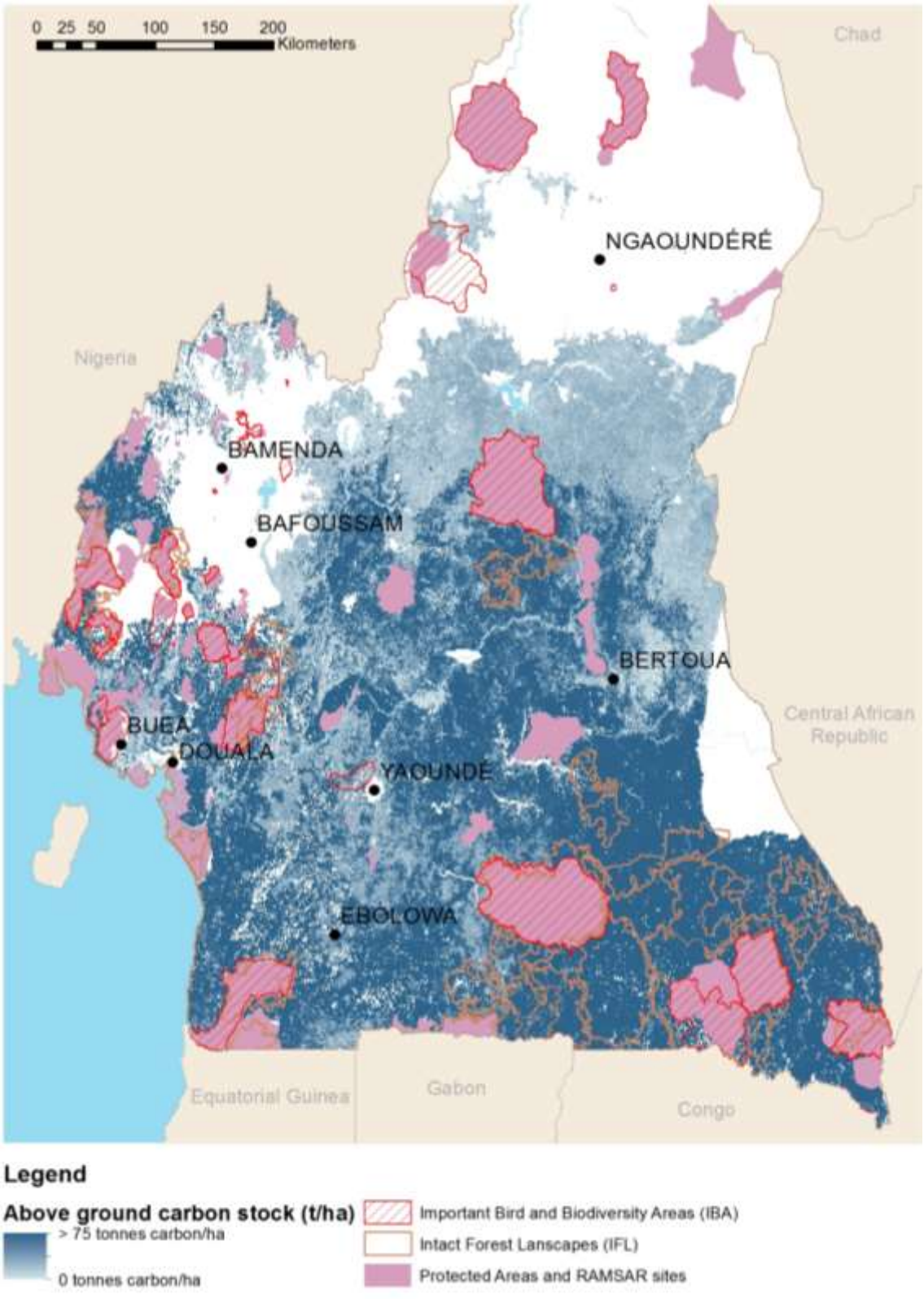


Figure 8: Area in Cameroon agroclimatically suitable for oil palm divided into zones with different aboveground carbon stock

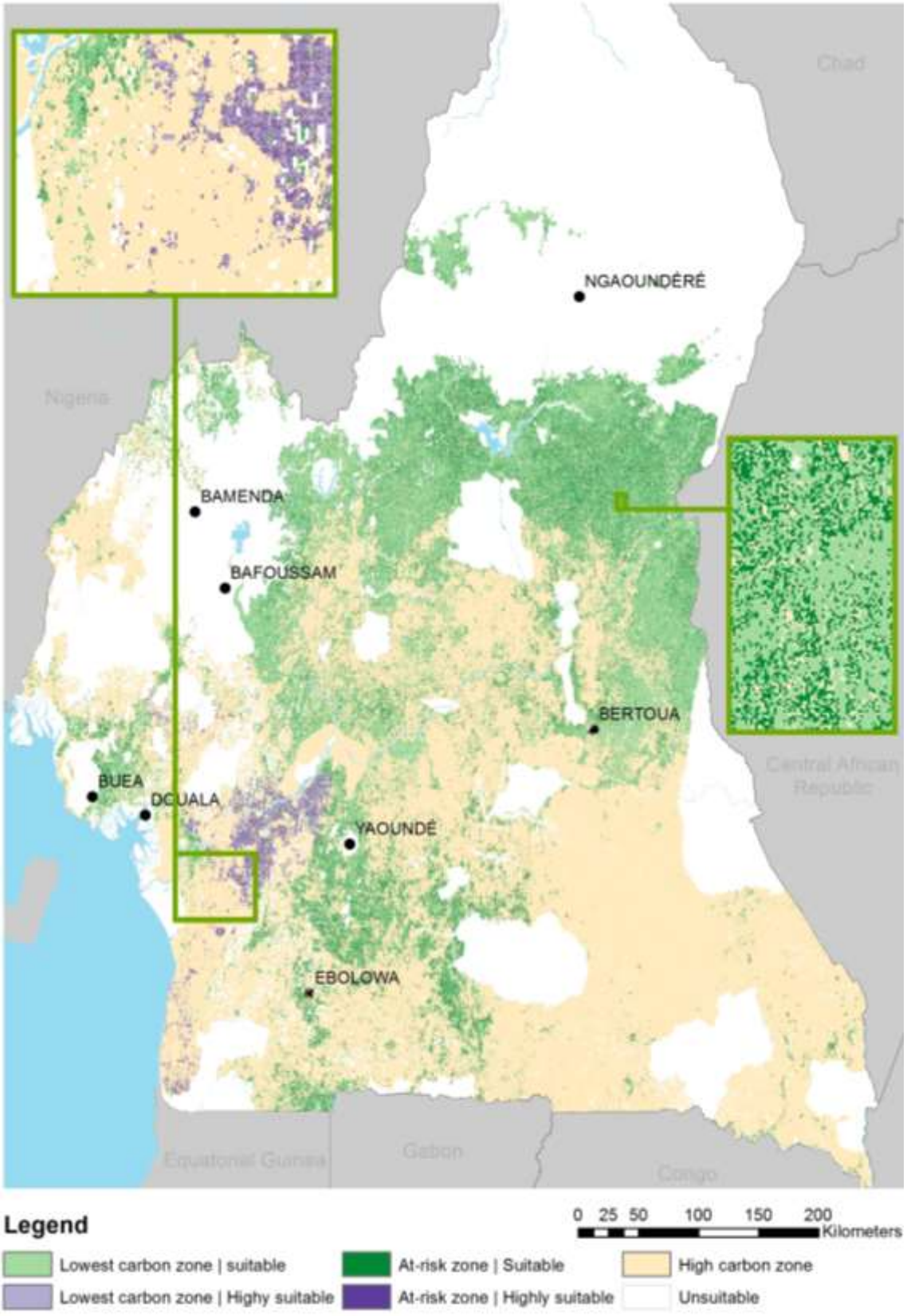


Figure 9: Carbon intensity on suitable land area in Gabon The map also shows the locations of IBAs, IFLs, PAs and Ramsar sites

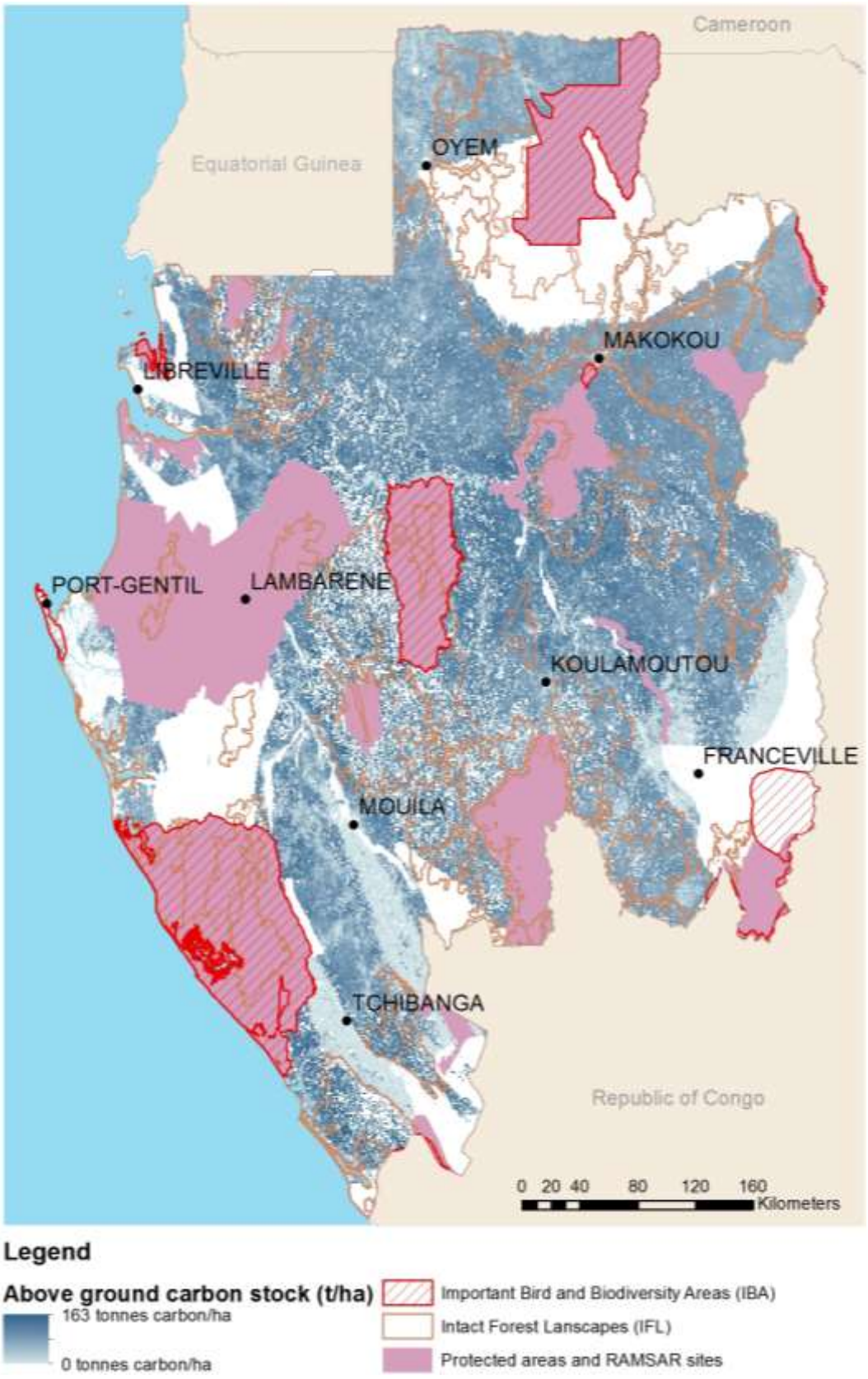
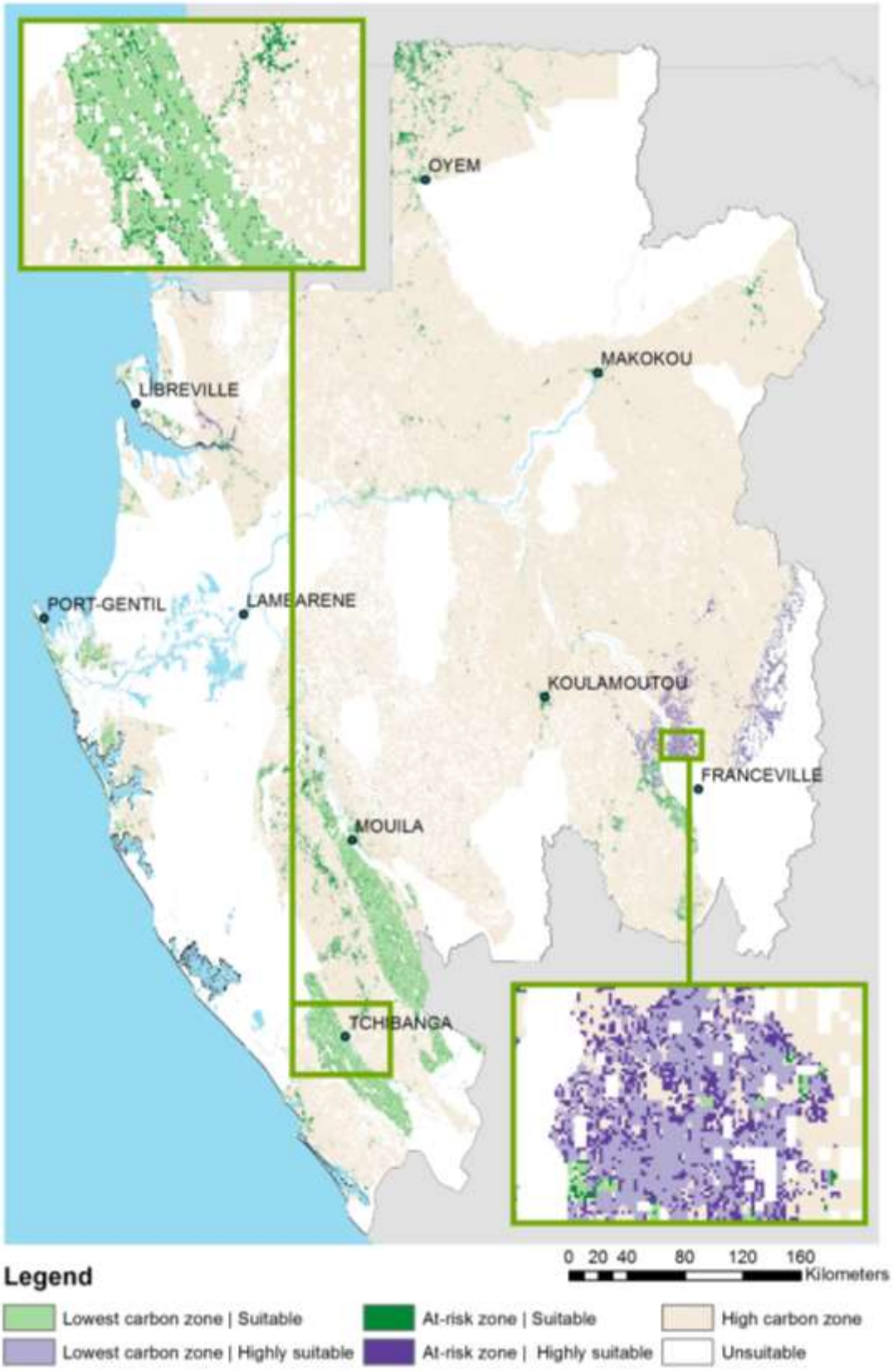


Figure 10: Area in Gabon agroclimatically suitable for oil palm divided into zones with different aboveground carbon stock



3.3.2 Land cover, potential yield and population density of suitable areas in Cameroon

In Cameroon, *highly suitable* land occurred within the regions of the country which have traditionally been used for oil palm agriculture – part of this overlapped with existing industrial plantations (of e.g. oil palm, rubber, and banana). As can be seen in figure 12, most of these *highly suitable* areas were located in areas which have high population densities. Much of the under-70tC/ha zones around Buea, Douala, Kribi and Yaoundé – including that in the *highly suitable* category – consisted of existing cropland (figure 11).

The *suitable* class had a far wider distribution in the country. The large suitable area in the east in the under-70tC/ha zones is drier than the South, Southwest and Littoral provinces and consists mostly of mosaics of deciduous gallery forest and savannah grasslands (figure 11). Oil palm yields are expected to be lower in these areas as compared to the southern and western parts of the country (figure 13). In fact, in contrast with the IIASA map, the GAEZ oil palm suitability map marks much of this area as unsuitable for the crop, with decreasing potential yields towards the north-east part of their suitability map (figure 13).

Figure 11: Land cover classification for Cameroon within the under-70 tC/ha zones according to ESA land cover classification

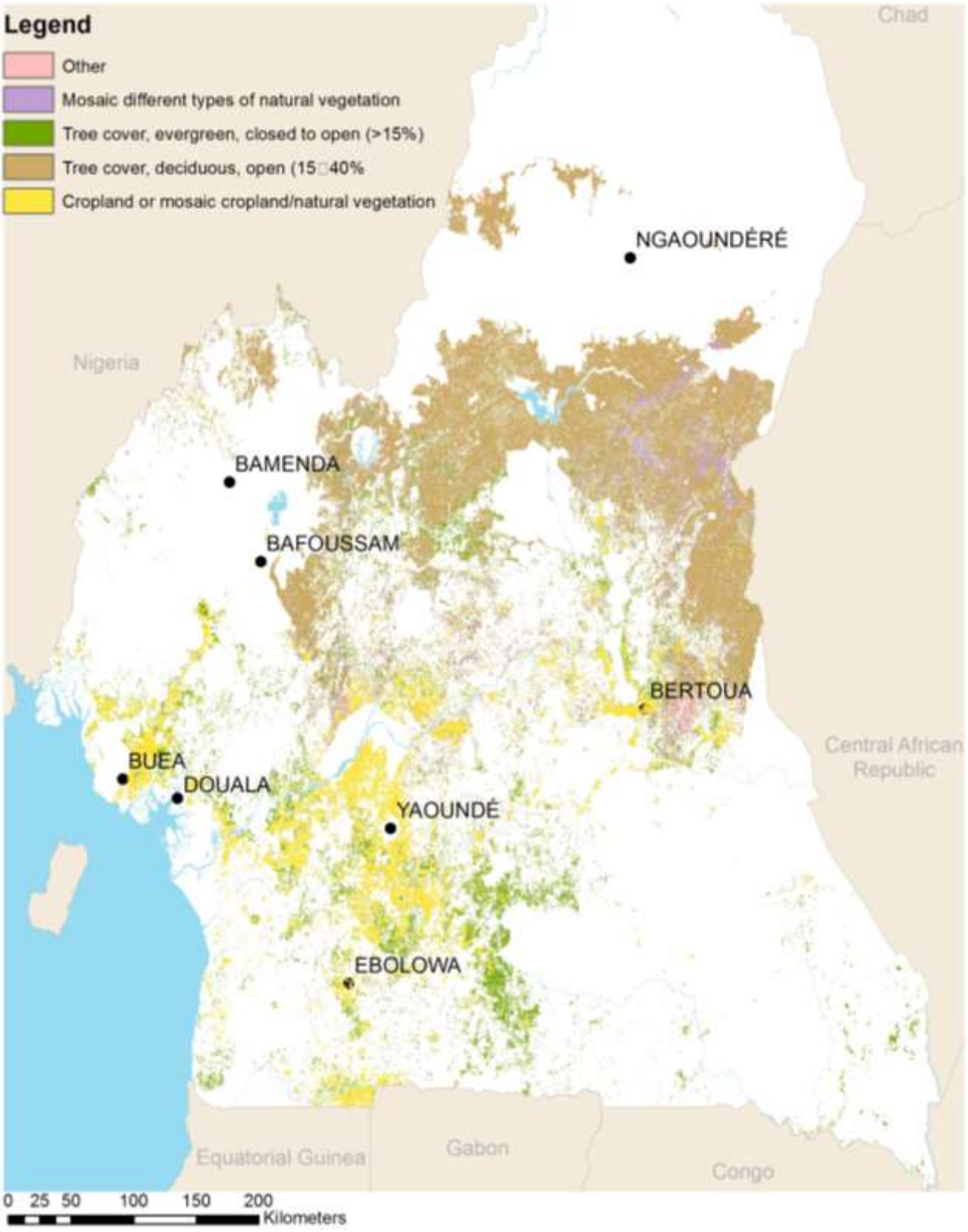


Figure 12: Population density in the under-70 tC/ha zones in Cameroon. Blue areas fall above the median density within the suitable zones and green below the median.

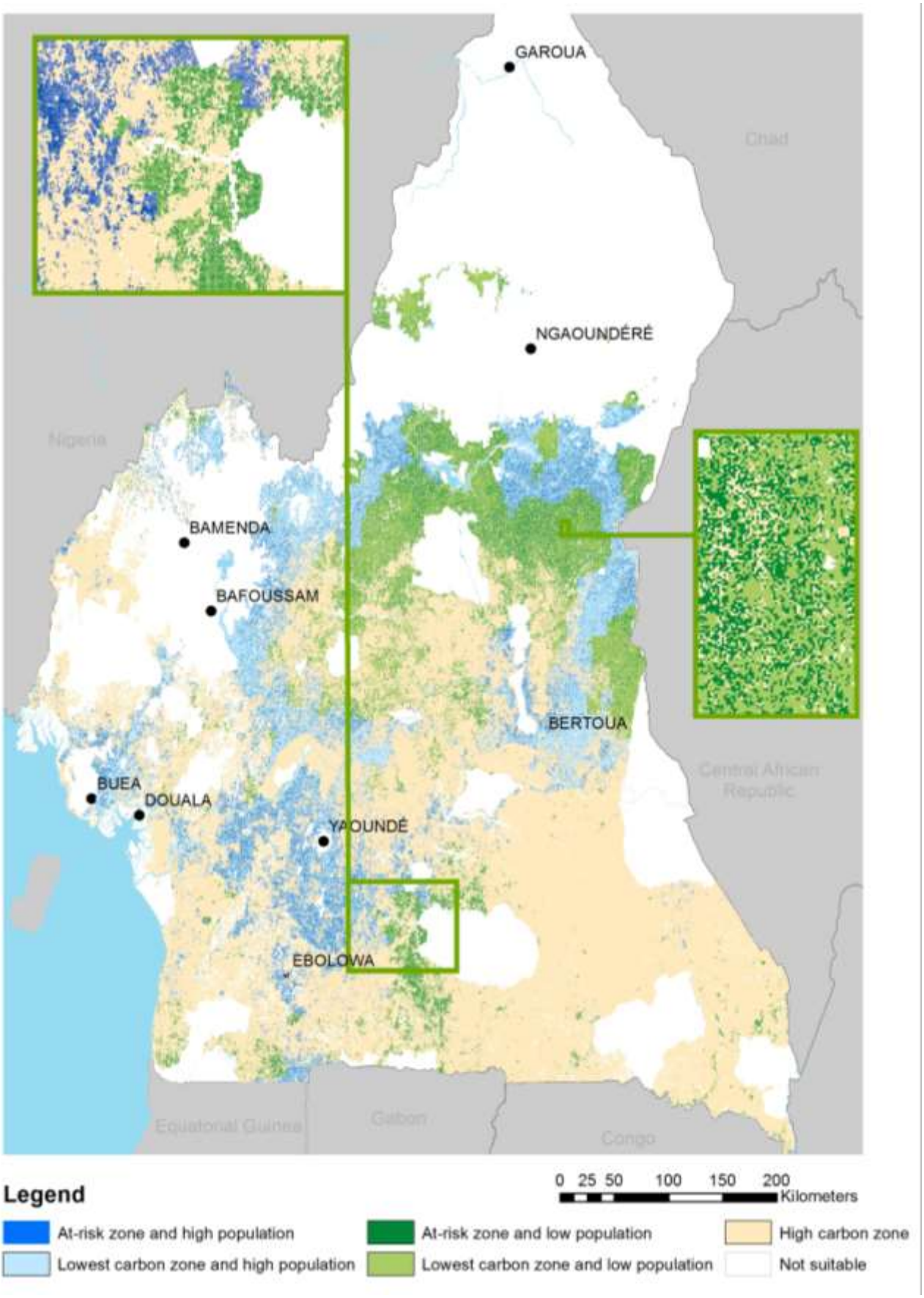
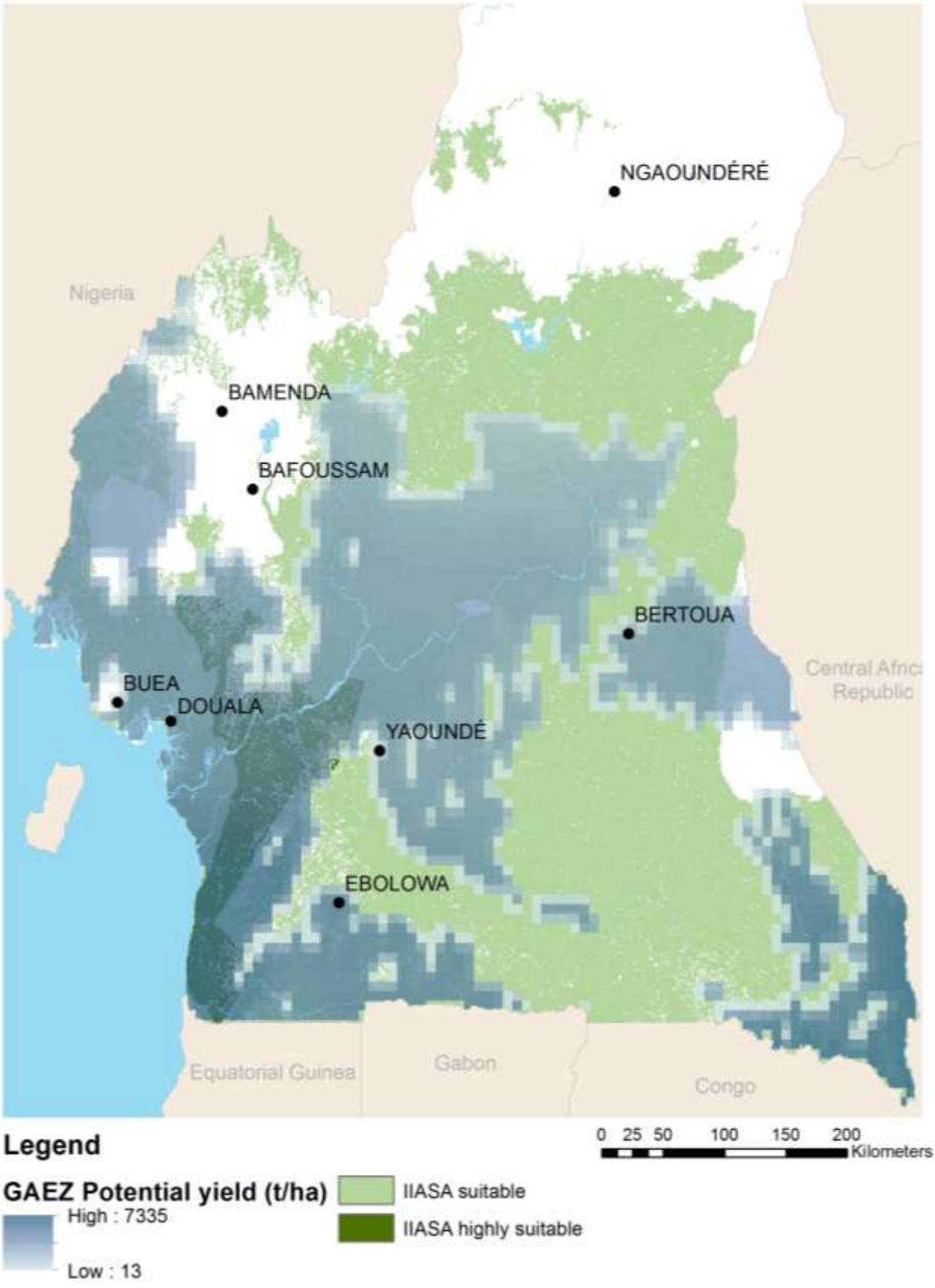


Figure 13: GAEZ and IIASA suitability maps for Cameroon
Janjan



3.3.3 Importance of thresholds for changes in relation to the distribution of threatened species

There was no consistent pattern across taxa as to whether the lowest carbon and at-risk zones differ from each other in the concentration of threatened and small-ranged amphibians, birds and mammals compared to what would be expected if these were randomly distributed throughout all of Cameroon (see figure 14). There are a few exceptions but these only concern a very small amount of land. For example, in the lowest carbon zone, there was an overrepresentation of cells with large numbers of threatened (21 - 24 species) and small-ranged amphibians (11 – 15 species), yet only a fraction of Cameroon has these high concentrations of amphibian species in the first place (see horizontal purple bars in figure 14a and 14b). For comparison: the majority of the country has zero threatened amphibians and, also, in other parts of the lowest carbon zone (with 6 - 20 species) there were substantially lower concentrations than expected at random.

What is clear is that the under-70 tC/ha zones did not show a disproportionately high concentration of species which are of concern as compared to the rest of the country; except which for areas with between 1 and 5 threatened amphibians were somewhat overrepresented in both these categories. In fact, there appeared to be a lower concentration of cells with many threatened or small-ranged mammals in the at-risk zone than would be expected, with the lowest carbon zone showing a similar pattern (figure 14e and 14f). A similar pattern was seen with high numbers of threatened birds (>30 species or more) although this concerned only a very small area of Cameroon (figure 14d).

Most of the areas with high concentrations of these species fell within a small region close to the current oil palm belt in the moist south and southwest of Cameroon (see figure 15). Yet most of the at-risk zone did in fact contain habitat of one or more threatened or small-ranged species with the exception of savannah land in the east.

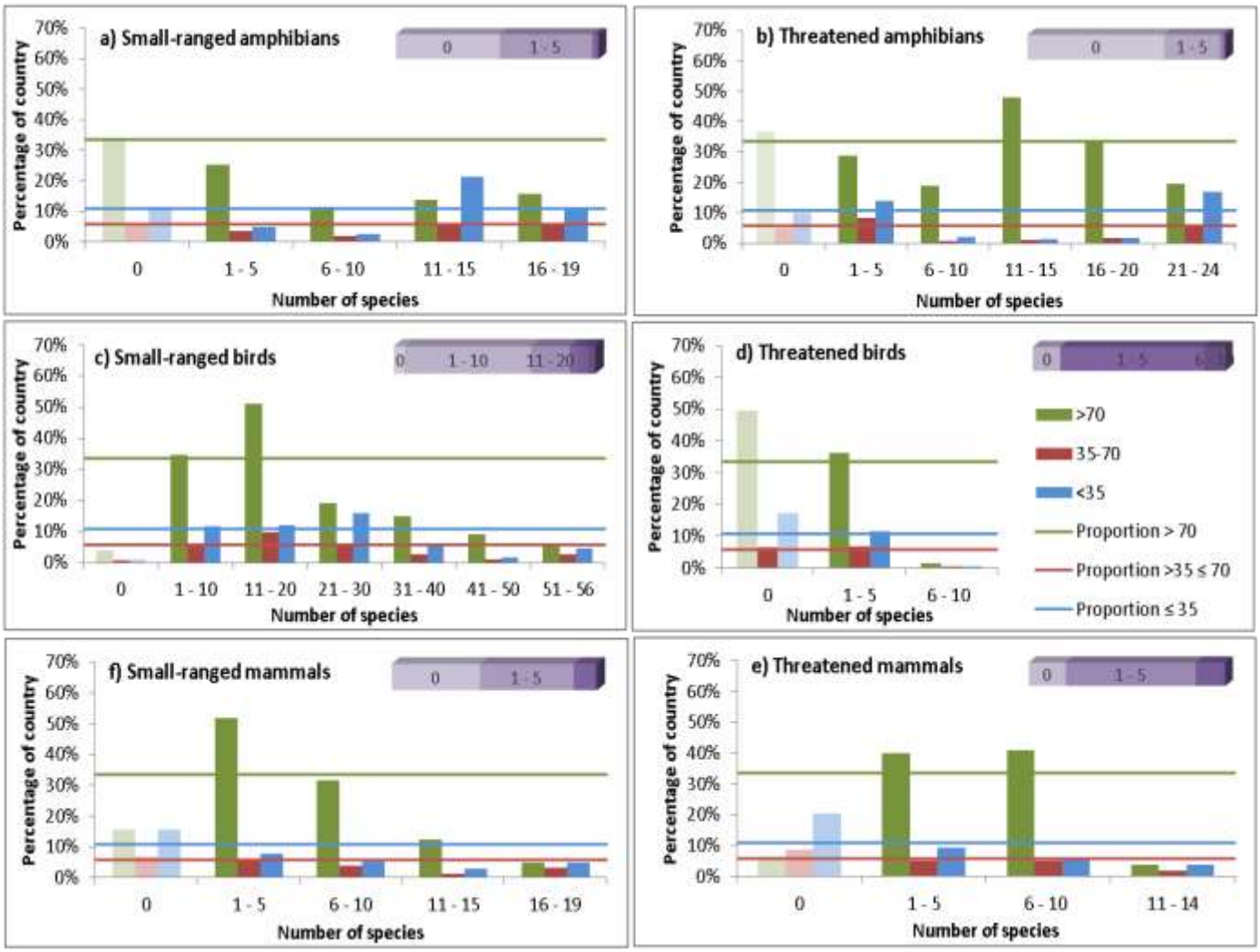
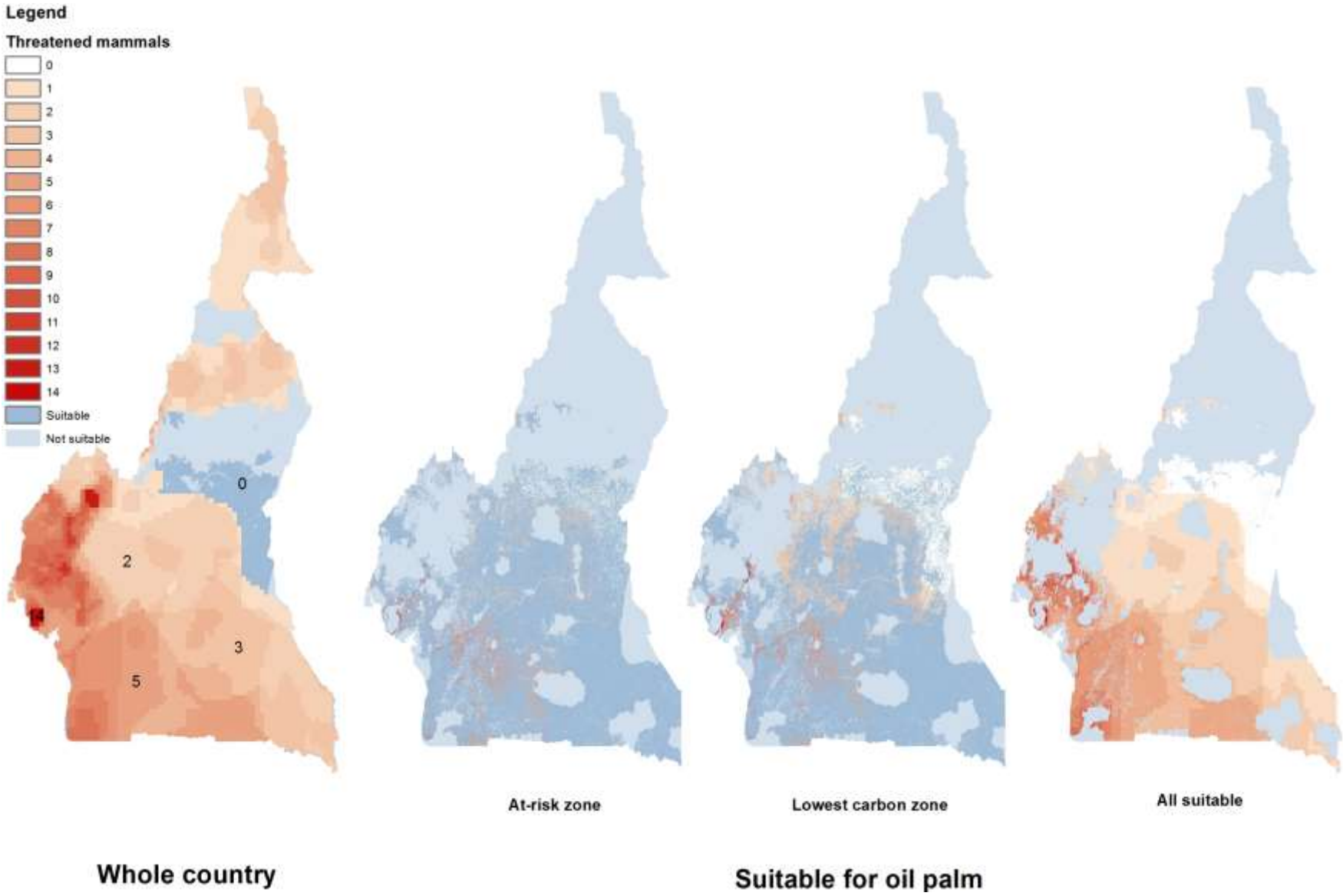


Figure 14: Distribution of (a) threatened amphibians, (b) small-ranged amphibians, (c) threatened birds, (d) small-ranged birds, (e) threatened mammals and (f) small-ranged mammals in relation to carbon levels within areas suitable for oil palm in Cameroon. Each bar shows the percentage of the country with that number of species which are present in each different zone, based on analysis at a resolution of 10 × 10 km. Horizontal lines show the percentage of the country in each zone. Bars taller than lines of the corresponding colour indicate a higher concentration of cells with that number of species than would be expected if cells were distributed at random throughout the country, and bars shorter than the corresponding lines indicate a lower concentration of cells with that number of species than would be expected. The horizontal purple bars indicate the proportion of Cameroon which has a certain number of that small-ranged or threatened taxa. This shows that in all cases, the area with a greater number of these species is far smaller than with none or few.

Figure 15: Number of threatened mammals in different zones. The presence of species is marked in a 10km grid. Patterns for other taxa are broadly similar.



3.3.4 Importance of threshold changes for intact forest landscapes (IFLs) and Important Bird and Biodiversity Areas (IBAs)

There was very little overlap between IFLs and IBAs and the under-70 tC/ha zones in Cameroon; 0.5% and 0.9% of all IFLs and IBAs respectively fell under this threshold. The high carbon zone also had little overlap between IBAs (2.9%) but 18.1% fell within intact forest landscapes.

It is also worthy to note that some ecosystems in Cameroon considered 'rare' and thus of high conservation value – such as mangroves, the Cameroonian Highlands, the Sahel savannah –sit entirely outside the areas which are considered suitable for oil palm (Olson and Dinerstein, 1998).

3.4 Qualitative study methods

For details on methods from semi-structured interviews and participant observation, please see chapter 2.2.

One of the ranking exercises used in these interviews concerned the relative difficulty of different sustainability criteria regarding site selection for new oil palm plantations. I extracted the principles related to the site selection for new plantations from the RSPO Principles & Criteria (RSPO, 2013). To these six principles I added a 'no deforestation of HCS forest' criterion, and then asked participants to name the three most challenging principles out of these to comply with. Twenty-five interviewees answered this final question, producing 65 answers in total, or a mean of 2.6 responses each.

3.5 Qualitative study results

3.5.1 Constraints for fulfilling Zero Deforestation commitments

When asked to name up to three out of a set of seven of the most challenging 'sustainable planting criteria for oil palm companies', a group of 25 expert interviewees ranked a social aspect of the land selection process first: eighteen respondents chose engaging with the 'Free Prior and Informed Consent' (FPIC) process, and ten of these considered FPIC the single most challenging.

Ranked second came applying the HCS concept, with sixteen respondents choosing this criteria. No deforestation of primary or HCV forest was chosen fifteen times. Four out of five respondents from oil palm plantation companies working in Africa named not clearing HCS forest as a particular challenge for their companies. The only company who did not rank HCS as difficult detailed that this was the case because they had acquired access to large expanses of aged oil palm plantation which they would be replanting for the foreseeable future. Of six Cameroonian government officials who answered this question only one quoted HCS as a challenge and none mentioned 'no deforestation of primary and HCV forest'. Among this group there was a common belief that the perceived benefits of economic development would be prioritised over the maintenance of forest. In this light, no deforestation for oil palm was not thought to be a potential obstacle for oil palm companies but rather an inevitable part of their operations.

3.5.2 HCS thresholds in Africa

Without being prompted, several individuals in the researcher, company and NGO groups, expressed the opinion that the HCS threshold of 35 tC/ha was inappropriate for the African context. In an interview, one university researcher who works on agricultural landscape planning in Gabon said:

'The current criteria don't work. The 35 tC/ha threshold has no relevance in Gabon. If

you follow it then you can only plant in [national capital] Libreville. (…) We must take the differences between Asia and Africa into account.'

It was widely believed that without a change in the threshold, companies with a Zero Deforestation commitment would not be able to develop oil palm anywhere in Africa on scales similar to those in Southeast Asia or, according to some, at all. In particular, very large blocks of land, in the range of 100,000s of hectares, which fit all environmental and social sustainability criteria and are commercially attractive, would be impossible to find. This confirms the findings of the mapping analysis described above. Even contiguous blocks of 5,000 ha could be difficult, if not impossible, to locate in Gabon and Cameroon if a 35 tC/ha threshold is applied and yields are expected to be high.

Company directors of two foreign companies which had recently begun planting in degraded forest areas in Liberia, were also concerned about the patchiness of their plantations and the implications this had for the cost of management in terms of reduced plantation areas in relation to infrastructure maintenance. Yet even if compromising on economies of scale, companies will face constraints in finding appropriate non-HCS land in Gabon and Cameroon and, indeed, elsewhere in Africa. Savannah areas, while having low carbon stock were seen by some to be agroclimatically unsuitable for profitable industrial oil palm production due to low rainfall or lengthy dry seasons. However, this may be untrue in certain savannah regions. For example, in order to comply with sustainability standards, Singaporean company Olam is developing plantations within a forest-savannah mosaic in south Gabon, close to Mouila, located on two valleys of ancient karst soils with low fertility (figure 16). While forest (and oil palm) can grow in these areas, annual burning by humans has kept the vegetation at the grassland stage, which it has been since prehistoric times (Proforest, 2015).

Figure 16: photographs of the location in Gabon where Olam's latest Mouila plantation is being developed: a) nursery next to an HCV area, showing the forest to the right and savannah to the left, and b) the savannah-forest mosaic around Mouila. Reproduced with permission by Christopher Stewart, Olam.

3.5.3 New plantations in the vicinity of people

Areas which previously supported forest, but where this has been cleared or degraded, are commonly populated (Rival and Levang, 2014). Interviewees agreed that large scale oil palm development there would likely run into difficulties because of the presence of people. Three related arguments were given for avoiding such locations:

First, concern was expressed about the cost in terms of lost livelihoods to local individuals and communities. Land with low carbon stocks in densely populated areas has often been cleared by local people and is then used as cropland. Replacing existing economic activity on a particular piece of land rather than increasing the size of the area which is already in production (by further clearing forest) can be undesirable to local people and government. Human rights NGOs often object to the acquisition of land by oil palm companies, calling this land grabbing (Cotula et al., 2009). As one interviewee said:

> *'In Liberia, people didn't understand why the companies were interested in agricultural lands. Why could they not go to the forest, where no one lives? And so the companies are trapped between conservation NGOs and indigenous rights NGOs.'*

Yet others perceived industrial oil palm development as a much-needed investment which would

help elevate people out of poverty by providing jobs and infrastructure in rural areas. These interviewees tended to see the sale or lease of cropland as a legitimate step on the way to improving livelihoods.

A second issue is the transaction costs involved in negotiating with people over land leases and compensation. The Free Prior and Informed Consent (FPIC) process, which aims to assure rights of communities are respected, is a challenging step in the development of a certified oil palm plantation. The process is costly and takes a long time, yet doubts about fairness and completeness of an FPIC assessment are frequently expressed by some NGOs and local people. Difficulties in negotiations are particular to specific plantations but can arise from e.g. a lack of clarity on land tenure, differing expectations among stakeholders and the high levels of distrust between companies or even the oil palm industry as a whole and local people. Companies are subject to reputational risk if they expand on lands which were previously used by local people. This may complicate and therefore hold back potential oil palm projects.

The third reason why the proximity of communities may be a constraint to oil palm development in degraded areas is direct conflict. While local people rarely have formal land rights and are not always in the best position to negotiate the terms of compensation in relation to a new project, protest against companies takes a number of extra-legal forms. Even when companies were acting in good faith, and local people had legitimate expectations based on their understanding of the situation, in a number of cases these expectations were tragically mismatched on both sides. The resulting dissatisfaction is then commonly expressed in the form of theft of the produce of the nearby plantations or in the use of black magic to threaten the company and its employees. In Cameroon, stealing of fresh fruit bunches (FFBs) of oil palm occurred at many of the plantations as reported by both villagers themselves and companies (Nkongho et al., 2014b). One company estimated that in 2013 about 20% of their production was lost to theft and, at one plantation, have built a deep trench around their farm to avoid this. People in and around Limbe, Kribi and Mundemba expressed the opinion that taking FFBs was 'natural', that this was 'their right', as they believed their interests were compromised by the companies. A number of interviewees believed that in Cameroon,

antagonistic relationships between companies and people would make successful development of industrial plantations in degraded forest near communities difficult.

3.6 Discussion

3.6.1 Discussion of main findings

The compliance to Zero Deforestation commitments is a significant challenge for companies looking to expand oil palm sustainably and responsibly in Gabon and Cameroon. Embarking on Zero Deforestation oil palm development in these countries implies the consideration of certain inevitable trade-offs. It is widely believed that there is very little land available under current criteria in Cameroon and Gabon, which is one reason why a discussion of more variable thresholds has arisen. According to my analysis, doubling the HCS carbon threshold, and without considering social constraints, would open up approximately 6% of additional land in Cameroon and 1% in Gabon for oil palm development under Zero Deforestation commitments. While this increase is relatively small, especially in Gabon, much of the lowest carbon zone is interspersed finely in between the at-risk zone. The changed carbon threshold might therefore in some locations solve the commercially unattractive patchiness of otherwise suitable non-forested land.

The potential environmental impacts of any agricultural development are impossible to predict based on global map data without conducting a set of specific analyses on the scale of the plantation itself. However, this study gave an indication that in comparison with the lowest carbon zone, areas in the at-risk zone were not more likely to be located in parts of Cameroon that support large numbers of threatened and small-ranged species. Nor is there much overlap with IBAs or IFLs in these places (for more detail see 3.6.2).[6]

In terms of the effect a threshold increase might have on the future trajectory of oil palm development in Cameroon and Gabon, it is vital to note that it could open up areas near existing settlements but further away than those in the lowest carbon zone. Land with vegetation in the at-risk zone is more likely *not* to be in regular use by local communities than

[6] This result is partly due to the non-overlap of land suited to oil palm and some of the highly biodiverse mountainous regions of Cameroon plus the exclusion of protected areas.

that with lower carbon stocks. This could, in part, reduce the issues faced by responsible oil palm producers with their relationship to local people who are often inhabiting less forested, ecologically degraded areas. However, much of the most agroclimatically suitable land in Cameroon is more densely populated than in less suitable regions and most low carbon land there consists of existing cropland. Primary challenges which arise when acquiring land for plantations near local people are the risk of replacing existing economic activity necessary for livelihoods, high transaction costs during negotiations, and the likelihood of conflict. Being able to include areas in the at-risk zone may somewhat ease these issues around access for land, although this is highly context-specific. Even so, these constraints will stay relevant to some degree, except in far-off savannah like areas; and production there is likely to be lower yielding because of rainfall conditions.

Often in campaigns and discussions on oil palm, environmental and social issues related to the crop are presented together: two reasons to condemn an entire industry. Yet my results imply that they are not two sides of one coin but, in fact, can be factors which contradict each other. In Cameroon, this plays out in such a way that selecting land which has low carbon stocks will have implications for profit (due to e.g. lower potential yields or cost related to the nearby human populations) and/or the social performance of an oil palm project. Table 4 shows more explicitly how the under-70 tC/ha zones is divided when considering population and suitability type, and what problems may arise for companies developing in different regions.

Table 4: The availability of land in Cameroon in relation to population density and suitability

		Highly suitable		**Suitable**	
		High population density	*Low population density*	*High population density*	*Low population density*
Lowest carbon zone	*Main characteristics*	Potentially excellent production. Non-contiguous areas. Typically existing cropland where there is potential for difficulties with people	Potentially excellent production. Non-contiguous areas	Typically either: existing cropland where there is potential for difficulties with people or savannah vegetation type, or: fragmented savannah land with less than optimal production levels	Primarily savannah vegetation type. Fragmented, less than optimal production levels
	Percentage of suitable land under 70 t/ha	1.6%	0.3%	35.7%	27.8%
At-risk zone	*Main characteristics*	Potentially excellent production. Non-contiguous areas. Typically existing cropland where there is potential for difficulties with people	Potentially excellent production. Non-contiguous areas	Typically either: existing cropland where there is potential for difficulties with peopleor savannah vegetation type, or: savannah land with less than optimal production levels. Taken together with below 35 t/ha fragmentation is often no longer an issue.	Primarily savannah vegetation type. Taken together with below 35 t/ha fragmentation is often no longer an issue. Less than optimal production levels
	Percentage of suitable land under 70 t/ha	1.8%	0.4%	17.4%	15.1%

Given the above, a change in thresholds could somewhat facilitate the potential development of plantations by responsible oil palm producers in Central Africa. This begs the question whether it is better to remain strict on carbon thresholds and thus severely limit Africa's potential to expand 'sustainable' oil palm, or to allow the clearance of vegetation with a somewhat higher carbon stock. Governments, civil society, companies, and international consumers engaged with sustainable production need to decide whether they are willing to accept the clearance of some vegetation for industrial oil palm plantations in Africa at levels higher than agreed on by the *HCS Approach.* Next I outline some arguments for and against increasing the carbon threshold in Cameroon and Gabon in HCS methodologies.

3.6.2 Arguments in favour of changing the threshold

Potentially limited impact on biodiversity

While nearly all suitable areas in Cameroon have some importance for threatened or small-ranged species, the places which would be included were the carbon threshold to double, did not generally seem to have a disproportionally high number of threatened or small-ranged species. Thus from this limited illustrative analysis, it appears that outright dismissing the idea of increasing the carbon threshold in e.g. Cameroon on the grounds of biodiversity richness within certain vegetation types alone is premature. Furthermore, there was no substantial overlap between the at-risk zone and IFLs or IBAs and much of the overlap was in areas in which fragmentation of the suitable area would render development by the relevant companies non-profitable. It would therefore be fairly straightforward to reduce the suitable area by excluding IBAs and IFLs. For counterarguments, see 'potential loss of biodiversity safeguard' section below.

Fairness

It can be argued that penalising countries with historically low deforestation rates by not "letting them" develop sustainable oil palm is unfair. Past "good behaviour" would thus prevent these nations from hosting responsible foreign businesses in the sector, whereas

countries which have already cleared much of their forest estate could. Increasing the carbon threshold would enlarge the area available for planting and reduce its patchiness. The underlying assumption behind the fairness argument is that as African nations want diversified economic development including an expanded oil palm sector, sustainability standards should adapt to accommodate that wish.

It is still debated whether plantation agriculture funded by foreign direct investment is actually of significant benefit to people and governments of developing countries (Feintrenie et al., 2010; Rival and Levang, 2014). Many belief that, on the contrary, it is more likely to increase inequality between and within communities and threaten livelihoods (McCarthy, 2010; Wakker et al., 2004). If this were true, avoiding oil palm expansion, even by companies committed to growing oil palm responsibly, would be fairer on the people of these countries. Furthermore, countries like Cameroon participate in REDD+ and other payment schemes which compensate for the maintenance of forest cover (Alemagi et al., 2014); an attempt to address this historical unfairness.

Multinational companies are held accountable by NGOs, local companies are often not

West and central Africa, and each country in it, has a large deficit in vegetable oil and is a net importer of palm oil (Ofosu-Budu and Sarpong, 2013). If nothing changes, international companies with sustainability commitments are likely to avoid African countries due to their 'having too much forest' (see chapter two). In August 2015, the Cameroon government decided to discourage the importation of palm oil by stipulating a minimum price for imported oil which is 150% higher than that for local palm oil in order to protect local industry (Shuh, 2015). If implemented effectively and on a long term basis – which is an uncertainty, not least because this policy stands in direct contradiction to WTO rules – this would lead to higher prices and increased demand for local palm oil. In the absence of foreign investors to fulfil the local market demand, smallholder farms and medium-sized enterprises owned by city elites may spring up and clear forest in due course (Nkongho et al., 2014a). Local companies are unlikely to take into account sustainability criteria when planting oil palm. Thus industrial-size planting by committed international businesses in the at-risk zone could conceivably lead to better environmental outcomes overall.

However, future environmentally responsible behaviour by multinationals depends in part on sustained monitoring and vigilance by NGOs. If, for some reason, this were to fail, companies which had established themselves during a high-vigilance period might be able and willing to clear forest after all.

3.6.3 Arguments against changing the threshold

Weakening of standards

A big change in a key criteria of the HCS concept, as discussed here, could be viewed as the weakening of a sustainability standard needed to safeguard forests in the future. While planting in areas of 70 tC/ha may be preferable to planting in areas with much higher carbon stocks, it needs to be established whether this would in fact be called deforestation or not, even if the risk to wildlife was to be considered low. It is essential to recognise that environmental standards and their criteria are created in response to demand from consumers, civil society and/or NGO supporters. Although the consumers and NGOs which demand Zero Deforestation for oil palm *might* believe that concerns of socio-economic justice should be taken into account when creating thresholds (at the cost of forest), there is no guarantee that they do. They may come to believe that the environmental standard they support has been diluted too much if care is not taken to assure that Zero Deforestation does indeed resemble an absence of forest clearance.

GHGs and thresholds

Increasing the carbon threshold would likely result in increased GHG emissions: the decision would mean it became acceptable to emit more carbon through clearing of vegetation than the future plantation will be able to store over its lifetime. For a plantation of 10,000 hectares, under a scenario in which the threshold was doubled, the aboveground carbon storage loss could be equivalent to up to 1,284,500 tonnes of CO2 emitted[7].

[7] This would be equivalent to e.g. ten days of London's carbon emissions or the yearly emissions of a small country like Aruba or Laos (ref)

However, the *HCS+* team is exploring whether carbon off-setting would be an acceptable option to deal with any unbalanced carbon emissions. This potential solution might take the form of additional carbon storage by protecting and rehabilitating degraded forests outside the concession (Raison et al., 2015). This may have the advantage of providing resources for the protection of forests and local jobs which would not exist otherwise. However, this method would require more land to be allocated to offsets, which could indirectly place pressure on non-degraded forest elsewhere by encouraging expansion of cropland in these places.

Loss of legitimacy

Multinational oil palm companies which are currently using the HCS concept as a land allocation tool, may experience reputational damage if they start using a different priority-setting mechanism in different countries but under the same commitment. If a new threshold is set too high, and land is cleared which certain NGOs, media or scientists can convincingly claim is tropical forest, companies will be seen to be in breach of their Zero Deforestation commitments. Tragically, even diligent users of the *HCS Approach* may lose their credibility simply by association with the weaker *HCS+*.

The setting of a higher carbon threshold for Africa could be read as opportunism by powerful actors: companies want access to land, and will do what they can to adapt the numbers so they can get it. Conversely, these companies might be genuinely willing to engage with actors who demand adherence to stringent environmental standards. Moving to Africa they face genuine constraints which could be alleviated, although not eliminated, by increasing the carbon threshold. Yet maintaining the trust of other actors might be best achieved by adhering to the strictest HCS criteria.

Potential loss of safeguard for biodiversity

While this study did not show that the at-risk zone does not seem to contain higher concentrations of endangered species than the lowest carbon zone, one might argue that as most of the former does support some threatened or small-ranged species, whatever can be conserved must be protected. Cameroon is one of the countries in the world which is richest in wildlife and

plant species, much of which is not well described or located (Brooks et al., 2001). Retaining the strictest carbon thresholds would assure that most of this is inadvertently converted by companies which have pledged to stop the destruction their industry was known for.

Yet in fact, both with the *HCS Approach* and the *HCS+*, whenever an actual plantation will be established with HCS criteria in mind, the companies involved will also engage in a High Conservation Value (HCV) process. They will thus identify areas within their concession which are most important to conserve for environmental or social reasons. This should assure that areas which could be converted under an increased carbon threshold will not be touched if they provide e.g. important habitat for endangered species. However, this approach by itself is often considered insufficient by conservationists (Edwards et al., 2012; Senior et al., 2015) and, in addition, various cases of misconduct show that is not a fool proof method (Paoli and Harjanthi, 2011). A stricter HCS methodology can be seen as an additional precaution against habitat loss. It is therefore relevant to consider whether it is wise to "allow" larger areas of Africa's land to be converted to oil palm by companies committed to the HCS concept, and thereby to potentially facilitate sustainable oil palm development more generally.

Opening up more remote areas

Areas in the at-risk zone may be further away from settlements and might be surrounded by forests of higher density (which would, in principle, be conserved if within the concession). Animal species living in these more remote areas may be affected when a plantation is opened nearby. Besides loss of species through forest conversion, a number of other anthropogenic threats faced by wildlife are associated with oil palm production. These include illegal hunting, road accidents or the presence of introduced predators. All these have been shown to occur regularly in oil palm plantations, including those certified by RSPO, and this is a concern because many protected areas lie adjacent to plantations and animals may forage outside protected areas (Azhar et al., 2013). However, this concern needs to be balanced with the realisation that an absence of responsible oil palm development may ultimately lead to the growth in plantations in even less suitable areas, reproducing the above issues in more vulnerable areas.

The adaptation of HCS criteria may have consequences which go beyond the immediately obvious. What is clear is that careful deliberation and open discussion involving biologists, social scientists, NGOs, companies and governments is necessary before making changes to the threshold. Yet carbon thresholds may or may not be the ideal tool for eliminating deforestation for palm oil more generally. In the next section I will briefly address this question.

3.6.4 Limitations of HCS carbon thresholds to achieve Zero Deforestation

Selecting land for oil palm could be done in a number of ways, of which an HCS methodology is only one. Other tools may be more suited to achieve oil palm development with the least harm to wildlife and forests. The Wildlife Conservation Society, for example, is developing a method for zoning the entirety of Gabon for recommended land use and conservation areas based on viable population sizes of endangered species such as great apes and elephants (interviews). Using carbon stocks or vegetation cover as a way to prioritise areas for conservation from oil palm may be a crude method with suboptimal outcomes.

However, the most effective land use planning occurs on scales beyond the concession level and would require deep cooperation between government, NGOs, a number of industries and local communities. Success with this type of collaboration may be unrealistic to expect in less developed countries in Africa (Newmark and Hough, 2000). Agreeing on long term national zoning plans which are acceptable to all stakeholders are costly and could take years (Guerrero et al., 2015). It's illustrative that the national interpretations for HCV and RSPO criteria have only been conducted for a handful of African countries despite efforts over the last five years, in spite of being less complicated than zoning schemes (HCV Resource Network, 2015; RSPO, 2015). For companies wishing to develop in the more immediate future, it may be more realistic to use an independent methodology to select land for the production of sustainable palm oil; further advantages being that the outcomes will be consistent across countries and primarily reliant on their own efforts. Therefore, an HCS process may be best suited to the immediate addressing of deforestation in the palm oil supply chain.

3.7 Conclusion

This chapter has provided insight into the potential role carbon thresholds could play in the development of large scale plantations under Zero Deforestation commitments in Gabon and Cameroon. For Cameroon, I have been unable to show that the at-risk zone has a higher value for wildlife conservation than the lowest carbon zone (in Cameroon only) yet recognise that this may still be the case. Importantly, an increase in carbon thresholds may facilitate expansion in certain areas due to a reduction in fragmentation of available land. Even so, I found that two main constraints to low carbon stock development in Cameroon and Gabon are 1) the presence of local communities in the under-70 tC/ha zones which have high yield potential and 2) conversely a decreased cost:benefit ratio in those areas where less people live, because of lower suitability for oil palm.

By choosing a two-country, mixed-methods approach, this analysis could combine mapping data with in-depth interview data on social and economic constraints in such a way as a broader study would not have been able to consider. Yet the findings have global scope and are highly relevant to other African countries with budding oil palm industries. In the future, one or both of the HCS toolkits may even be used by a wide range of plantation industries in the tropics; deliberation on the impacts that *HCS+* and its new, more flexible thresholds may have on people and forests is key. If thresholds are not increased at all this may mean that little to no new 'sustainable' oil palm will be grown in Cameroon and only some in Gabon. This would either leave future development of oil palm in the hands of companies without policies to avoid deforestation, or limit further oil palm expansion entirely. If increased too much, the HCS concept may be perceived as too diluted and no longer useful in limiting deforestation. To some extent, the ultimate effect of campaign action on the palm oil sector in Cameroon and Gabon will be co-determined by whether a new, flexible *HCS+* methodology will be accepted and implemented.

Chapter 4

Conclusion

In this thesis I asked how 1) the trajectory of industrial oil palm development in Gabon and Cameroon has changed at a time when pressure from a transnational advocacy network led to corporate commitments to stop deforestation, and 2) how it might do so in the future given changing interpretations of the standards used to operationalise these commitments. I conducted a mixed methods study focusing on two countries, combining spatial analysis with qualitative research, to explore how a normative transformation in the global palm oil sector was enacted locally, in palm oil's "new frontier". My work went further than existing examinations on the discursive commitments made by important businesses and considered the impact of these pledges on the ground, in Gabon and Cameroon.

While time must tell whether meaningful, lasting progress has been made, I argued that 18 years of transnational advocacy by thousands of actors has played a central role in avoiding destructive oil palm expansion in Cameroon and Gabon. Most importantly, it is perceived that foreign investors have either 1) withdrawn from creating new plantations due to the incompatibility of their commitments with the high levels of forest cover in the available areas which are most agroclimatically suitable, or 2) chosen to develop in less profitable areas in order to prevent attacks on their reputation by NGOs. Thus my thesis suggested that whereas balancing social, commercial and environmental factors was previously a matter of individual business plans, no multinational oil palm company can now act without being affected by the scrutiny which NGOs and others in the transnational advocacy network subject them to. Therefore, my findings are consistent with the recent literature on transnational advocacy networks, which posits that these networks, and the NGOs within them, can possess substantial influencing power in the international corporate arena. Not only should this hearten NGOs, activists and their supporters, it also provides a counterpoint to the view that the problems of social disruption and environmental damage by the oil palm industry are intractable and

insoluble.

Currently, a key question is what carbon thresholds will be set for African countries in the new *HCS+* methodology and whether this will be accepted by companies and civil society alike as a valid alternative to the stricter *HCS Approach*. In chapter three I explored various aspects of a potential change. A key finding here was that responsible plantation companies wishing to expand in Gabon and Cameroon are faced with challenging trade-offs between yield and other cost factors, social risk and adherence to strict environmental standards. Parties involved with setting new HCS thresholds – as well as critics of the palm oil industry – could benefit from taking this knowledge into account. The findings challenge the idea that crops such as oil palm could easily be grown on degraded land, and add a note of caution to the arguments made in favour of doing so across the tropics.

While my work has suggested *that* transnational advocacy networks have affected deforestation for oil palm development in Cameroon and Gabon, it would be worthwhile to investigate in more detail *how* this was done: which aspects of the campaign had the largest impact? What actions were superfluous or counter-productive? Which actors were most important? Qualitative – perhaps ethnographic – studies of the connections between members of the transnational advocacy network, as well as the nature of its relationships with government and business, could greatly improve the understanding of this important phenomenon. Such studies could aid in future campaign design, increasing its efficiency and efficacy. Furthermore, recognising the power of these networks, researchers could decide to engage with them actively, perhaps researching which causes are most compatible with the modus operandi of transnational advocacy networks.

If the ground-breaking work done in the case of oil palm can be reproduced in other areas of environmental conservation, the prospects for the many ecosystems which are threatened by the activities of corporations may be better than we currently think. In the careful words of one of my interviewees:

'There is no reason not to be reasonably optimistic.'

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Appendix A: Project information sheet

UNIVERSITY OF CAMBRIDGE
Department of Zoology

October 2014

Project information sheet

Land allocation for sustainable oil palm in Gabon and Cameroon

Firstly, let me introduce myself. My name is Milja Fenger and I am an MPhil student at the University of Cambridge, England. I am researching the potential for sustainable oil palm production in Gabon and Cameroon. The project is conducted in partnership with colleagues from the Center for International Forestry Research (CIFOR) in Yaoundé.

One of the central objectives of the project is to analyse prospective obstacles to future sustainable oil palm development in Central Africa and identify ways to overcome these.

Therefore, I would like to ask you a number of questions to learn more about your knowledge and opinions on a variety of topics including oil palm development. I would like to record the conversation to allow me to relisten to it and accurately remember what you said. The recording will only be identified by a number, not your name, and will be deleted after the study.

I would like to speak to you because of your experience and expertise in this area, but you are under no obligation to participate and can withdraw at any time. If there are any questions which you feel uncomfortable answering, please do tell me. The interview should take between 20 and 60 minutes and can be stopped at any time.

This information will be used for my masters' thesis and related scientific publications but all responses will be anonymous and not linked to your name. This research is organised by the University of Cambridge, UK, and approved by the Department of Geography Ethics Review Group.

What if you want to make a complaint?
If you are unhappy with any aspect of the project, we would urge you to contact the lead researcher in writing or by telephone (contact details below) to discuss your concerns.

Alternatively, to make a formal complaint you can contact:

Julian Jacobs, Departmental Administrator,
Department of Zoology, University of Cambridge

Downing Street, Cambridge CB2 3EJ.
Tel: 01223 336621, Fax: 01223 336687, Email: jj280@cam.ac.uk

You can find out about us and our work on our website: www.zoo.cam.ac.uk/zoostaff/csg/index.html and please contact me if you would like more information:

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Appendix B: Question and topic guideline for research interviews Cameroon

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UNIVERSITY OF CAMBRIDGE
Department of Zoology

[Go through consent form, explain research project]
These questions concern oil palm development in Central Africa, I am looking to learn more about your perception and opinions on this topic. If you know more about oil palm development in other parts of the world, please feel free to draw on that knowledge.
Do you have any questions before we start?

[wait for response – answer questions]
[Begin interview]
[Ask basic organisation info and interviewee role within it to get conversation started]

I would like to start with a general discussion on the work you do in relation to oil palm development. Could you tell me a little about this?

1) Decision-making
1a) Could you tell me about your impressions of the decision-making process that goes into land allocation for oil palm? (What are the different stages? How long does each one take? Do you play a role in this? What role do environmental and social concerns play in land allocation?)

1b) What is the relative importance of each of the following stakeholder groups in the process of decision-making on land allocation for oil palm? *See below*

1c) Are there any other organisations which influence the process?

1d)

	1b) Importance *Please give scores from 1 to 5, with 1 representing 'not important at all' and 5 'extremely important', or score 'don't know'*
National government	
Local communities	
Plantation companies	

Distribution companies	
Corporate palm oil consumers	
Local NGOs	
International NGOs	

[Discuss the ranking response: why are these important? What role do they each play?]

2) Environmental and social concerns

Various organisations and individuals are promoting the planting of new oil palm on so-called 'degraded areas'. Here, when we say 'degraded land' we mean previously forested land which has been cleared and has not regrown significantly but which would be suitable for oil palm cultivation. Planting on such lands would avoid tropical forest loss, and as such is sometimes described as more "sustainable".

Do you believe that the (global) oil palm industry is becoming more sustainable?

2a) Of the following, what factors play the most important role in leading the oil palm industry towards more sustainable practices? *Please rank*

	Importance *Which are the three most important factors? Please rank these in order of importance, with 1 being the m important*
IFC or other funding requirements	
Laws and regulation	
Company policy due to personal preferences employees/owners	
Social license to operate in host country	
Social license to operate in consumer countries Incl. media coverage/petitions	
Reduction of production costs	
Market access Incl. maintaining/acquiring RSPO membership	
Other: …….	
Other: …….	
Other: …….	

2b)
Here is a set of principles some describe as prequisites for sustainable palm oil production. *[give sheet]*

Which three principles are most challenging to comply with (for companies)? (Difficult, costly, time-consuming)

New planting principles

No deforestation of primary or HCV forest New plantings since November 2005 have not replaced primary forest or any area required to maintain or enhance one or more High Conservation Values.

Not on steep land or peat Extensive planting on steep terrain, and/or marginal and fragile soils, including peat, is avoided.

Compensating local people Where it can be demonstrated that local peoples have legal, customary or user rights, they are compensated for any agreed land acquisitions and relinquishment of rights, subject to their free, prior and informed consent and negotiated agreements.

No deforestation of High Carbon Stock (HCS) forest New plantation developments do not take place on areas with HCS forest

No use of fire No use of fire in the preparation of new plantings other than in specific situations, as identified in the ASEAN guidelines or other regional best practice.

Free, prior and informed consent No new plantings are established on local peoples' land where it can be demonstrated that there are legal, customary or user rights, without their free, prior and informed consent. This is dealt with through a documented system that enables these and other stakeholders to express their views through their own representative institutions.

Using soil surveys and other information Soil surveys and topographic information are used for site planning in the establishment of new plantings, and the results are incorporated into plans and operations.

[Discuss responses]

3) Constraints and overcoming them

3a)
What do you think are the largest practical benefits to developing within forested areas? (if no response: specify 'for a company?')

The largest disadvantages?

3b)
What do you believe are the obstacles or constraints to land allocation for oil palm in non-forested areas/planting oil palm outside of forest areas?

5) When appropriate: Collaboration between NGOs, companies and government

Could you tell me a little about any collaboration you have with any NGOs/government agencies/companies?

[encourage discussion on their work and conflicts with (other) NGOs and (other) government agencies]

What could the role of scientists in helping to ensure that plantations are developed in the most appropriate places? Governments? NGOs?

6) Finishing up
Is there anything else you would can think of which you would like to share?
(Anything that may be relevant to my study? Any anecdotes relating to your work with oil palm)

Thank you very much for your participation. You can find my contact details on the sheet I have given you. Please do not hesitate to contact me if you have any questions about the project.

Do you have any questions right now?

Okay, thank you very much.

Appendix C: Ethics approval